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IN OUR NEWS SECTION: H-1B visa cap can't be lowered fast enough for angry unemployed tech workers. PAGE 4
Struggling airlines unable to invest in IT projects that could help them recover. PAGE 8

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KNOWLEDGE CENTER
WEB SITE MANAGEMENT

RICHARD DOWNS

Hard-Workin' Web Sites

SPECIAL REPORT Is your Web site getting sluggish or stale? This special report will help you make it fast, fresh and reliable for high-volume business traffic.

STORIES BEGIN ON PAGE 23.

SOME HIGHLIGHTS
- **How to** turbocharge a slow Web site.
- **Content management:** Pick the right tools for your business.
- **A low-cost makeover** can do wonders for an aging Web site.

ONLINE EXCLUSIVE
Reduce the hassles of managing Web domain names.

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IT WOES HINDER FISCAL REPORTING

In study, 63% of CFOs say they're stuck with inadequate financial systems

BY THOMAS HOFFMAN

As CEOs and CFOs raced to meet a U.S. Securities and Exchange Commission deadline last week to certify their companies' financial results, executives and industry experts said legacy systems and disparate accounting systems inherited through mergers and acquisitions are impeding their efforts to make full and accurate financial disclosures.

An Aug. 14 deadline was imposed by the SEC for 695 publicly held companies with revenue in excess of $1.2 billion to swear by the accuracy of their financial statements.

The deadline coincided with the release of a study by New York-based Cap Gemini Ernst & Young. It revealed that although 81% of the 265 chief financial officers surveyed deem accurate revenue and earnings forecasting to be a "high priority," 63% said they're saddled with inadequate budgeting, forecasting and decision-support systems that hamper their ability to get the job done.

FINANCE WATCH

Part of the problem is that many companies continue to rely on outmoded legacy systems that fail to draw needed financial information from across all facets of the business. In many cases, companies have automated accounting and finance functions but have failed to properly link their financial processes with those systems. And in some cases, the processes themselves are poorly designed.

Tom Redman, president of Navesink Consulting Group in Little Silver, N.J., and a senior consultant with Cutter Consortium in Arlington, Mass., works with a lot of companies on their billing, accounts payable and other finance-related processes. For most companies, said Redman, these processes "are

VISUALCAFE USERS CONFRONT SELL-OFF

Mull TogetherSoft's vow to support Java dev tool

BY CAROL SLIWA

When long-struggling WebGain Inc. sold off its popular VisualCafe development tool last week, users were left with some serious decisions to make about how to build and maintain their Java applications going forward.

They can stick with the tool and wait to see how Together-Soft Corp. in Raleigh, N.C., follows through on the acquisition and its pledge to indefinitely support WebGain Studio, which includes VisualCafe. VisualCafe was at one time the market-leading Java integrated development environment.

Another option is to switch to a different tool, such as TogetherSoft's ControlCenter or Borland Software Corp.'s JBuilder, the current Java IDE

NEW RISK FOR WIRELESS ACCESS POINTS

'Warchalkers' marking Wi-Fi sites, feds warn

BY DAN VERTON

Federal law enforcement officials are warning companies of a systematic effort by computer enthusiasts and possibly hackers to mark and map non-secured Wi-Fi 802.11b wireless access points in many major metropolitan areas.

Bill Shore, a special agent with the FBI's Pittsburgh field office, recently contacted private-sector members of the local FBI InfraGard chapter to warn them of a process known as "warchalking" — the physical marking of a building to denote an open wireless access point.

InfraGard chapters are local partnerships between the FBI and businesses in particular geographic areas, established with the aim of sharing cyber-security information. There are 56 such chapters in the U.S.

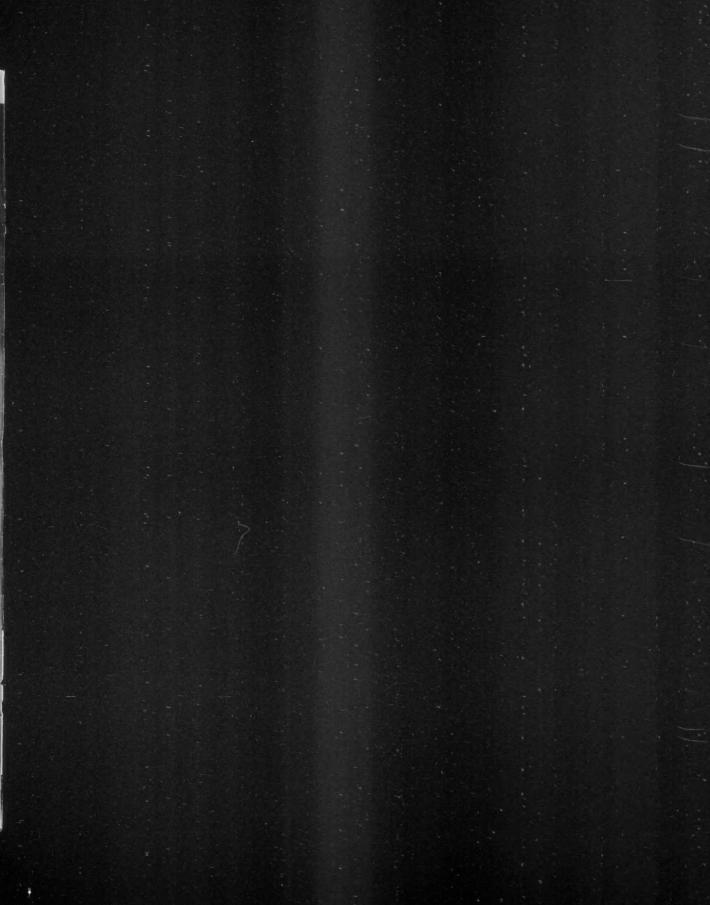Shore likened warchalking to hobos marking public places that are willing to provide a hot

FEELING INSECURE? What it takes to safeguard wireless networks and root out rogue access points.
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www.computerworld.com

"There's a new _____ on the Web."

ainst that?"

The future of Microsoft products: designing and engineering for maximum security
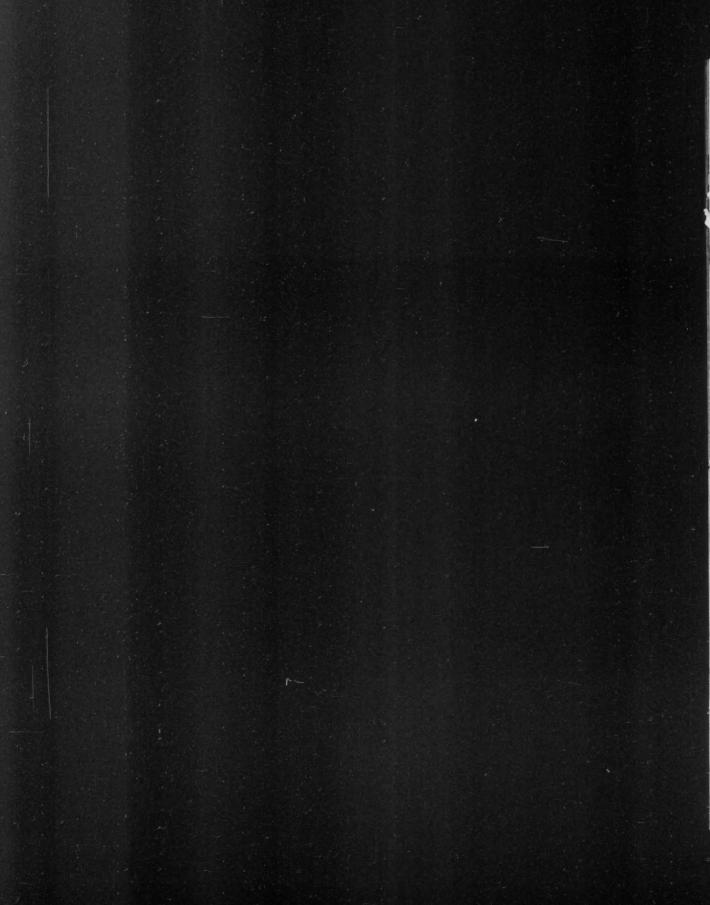
Microsoft has implemented engineering standards and processes that focus on building greater security into our products during design and development. Some highlights of the new processes include:
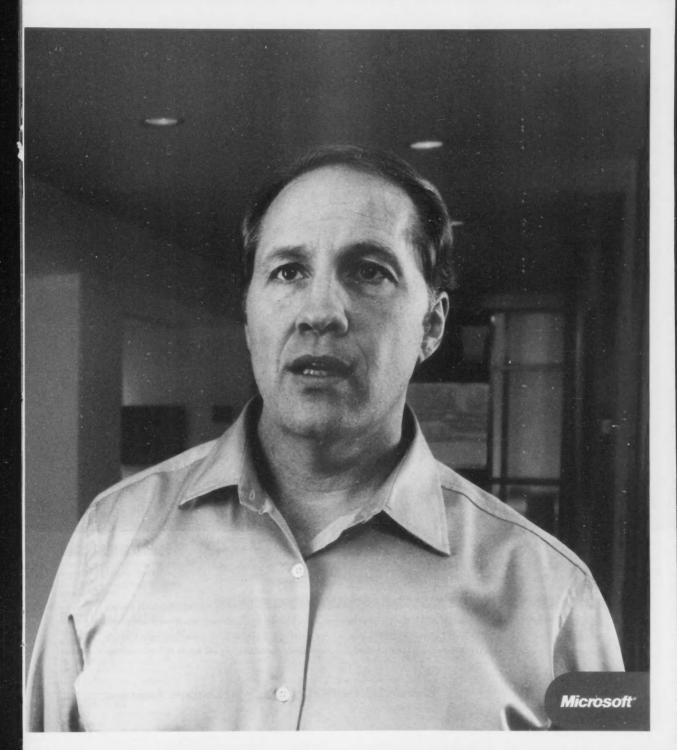
• Creating stronger default policies on all software, and fewer services enabled by default, to deliver software solutions that are more secure by default

• Performing exhaustive cross-team security code reviews to help identify and address potential vulnerabilities before the software is released

• Developing and refreshing new threat models to help counter constantly evolving security risks

Market Fact: *"Unisys security services, partnered with Microsoft products and solutions, provide our customers with highly secure and cost-effective mission-critical solutions."*

—Sunil Misra, Managing Principal, Worldwide Security Practice, Unisys

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NEWS 4

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KNOWLEDGE CENTER WEB SITE MANAGEMENT

SPECIAL REPORT

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ILLUSTRATIONS BY RICHARD DOWNS

MASTERING YOUR DOMAINS

As companies grow, often their list of domain name registrations do too. Some are drawing the line and abandoning the notion of trying to own every possible variation of their brand names.
QuickLink: 31738

THE INSIDE DOPE ON CORPORATE PORTALS

Q&A: Want to keep your company's portal alive and well? An IT manager and expert on corporate portals tells how to select the software and keep the content fresh.
QuickLink: 31891

WANTED: 'DASHBOARD' FOR WEB ANALYSIS

Q&A: Michael Weider, CTO at Watchfire Corp., says Web sites are becoming so complex that IT needs a "dashboard" to see what's happening. He also outlines ways to cut costs.
QuickLink: 31900

Congress May Bear Brunt of H-1B Anger

Grass-roots objections to visa program conflict with lobbyist efforts to raise cap

BY PATRICK THIBODEAU
WASHINGTON

WHEN IT companies announce layoffs, Rob Sanchez, an unemployed programmer who says he lost his job because of the H-1B visa program, usually sees a traffic spike from the downsizing company's domain on his Web site, Zazona.com.

Sanchez says visitors to his Web site are checking to see if their company is using H-1B workers. Using federal Freedom of Information Act requests, Sanchez has built an online database of approximately 1.1 million "labor condition applications" that list the firms using H-1B employees, the number of those employees, their job types and their pay.

Sanchez is just one of many people unhappy with the H-1B program, and he's fighting it with data. Another is Linda Evans, a woman in North Carolina who writes letters to elected federal officials. She said her husband, a longtime IT worker, was laid off because of the H-1B program. "People are mad," she said.

The power of this grass-roots anger may well be tested in the next congressional session, which begins in January, if an expected push by high-tech lobbying groups to reverse a planned lowering of the H-1B cap materializes. But so far, the economic downturn has kept H-1B applications well short of this year's 195,000 cap.

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Immigration and Naturalization Service (INS) isn't forecasting a total for this year but has approximately 18,500 pending applications. And although the cap wasn't reached last year, the number of H-1B visas issued still represented a record number for what has been a controversial program.

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High-tech groups are expected to begin lobbying Congress next year to increase the 65,000 cap, but the ongoing demand shortfalls could make that effort difficult, said Lynn Shotwell, director of government relations at the American Council of International Personnel Inc. in Washington.

But "I would hate to see us put ourselves in a situation where the cap goes back down to 65,000 and the economy heats up, and suddenly you can't get workers in that you need," she added.

However, IEEE-USA, a unit of the Institute of Electronics and Electrical Engineers Inc. in Washington, maintains that the H-1B program is responsible for the fates of some of the 180,000 computer scientists and electrical engineers it says are unemployed. At that level, "it seems difficult to make the case that the higher cap needs to be extended," said IEEE Vice President John Steadman.

In any case, lawmakers will continue to get an earful.

"Nobody should be blaming H-1B visa holders," said Sanchez. "Congress is the one who created this mess." ▶

Vendors Try Again With Desktop Linux

Red Hat, Sun ready client-level support for open-source OS

BY MATT BERGER
SAN FRANCISCO

Linux hasn't made much of an impact on PCs thus far. But some technology vendors are preparing to take another dip in the desktop Linux waters.

Red Hat Inc. is developing a version of its Linux distribution aimed at high-end desktop systems used by workers such as financial analysts and product engineers. Michael Tiemann, Red Hat's chief technology officer, said at last week's

LinuxWorld Conference & Expo here that the company has already made available a beta-test release of the desktop software, code-named Limbo.

Sun Microsystems Inc. is also eyeing desktop Linux. Sun CEO Scott McNealy said in a keynote speech that the company will detail client-level plans for supporting Linux at its SunNetwork 2002 conference next month.

While Linux is starting to make inroads in the corporate market on servers, the open-source operating system has been much less successful at the desktop level. Notable setbacks include Dell Computer Corp.'s decision last August to stop offering Linux as a regular

option on its PCs and the May 2001 shutdown of desktop Linux developer Eazel Inc. in Mountain View, Calif.

"We have clearly seen a limited amount [of demand for desktop Linux] to date in the U.S.," said Randy Groves, vice president of Dell's enterprise systems group, during a press conference at LinuxWorld.

Interest among users in running Linux on desktop systems "is probably growing" now, Groves said. But workstations, not general-purpose PCs, "continue to be the area with most of the focus," he added.

Raleigh, N.C.-based Red Hat plans to target workstation users with the desktop version of its software, which is ex-

pected to be released later this year. Tiemann said the call for a version of Red Hat Linux that can be easily deployed and managed on desktops is coming mainly from companies in the financial services industry that use its Advanced Server operating system.

"They all used to say to me, 'Don't waste your time thinking about the desktop,'" Tiemann said. "But over the past three months, we've been getting inquiries. There's a light at the end of the desktop tunnel." ▶

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NO WINDOWS, PLEASE
Dell is shipping PCs without Windows, or any other installed operating system, to some corporate users.

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NEWS

Sun Turns to Open Source In Competitive Angling

Linux to help drive 'edge server' strategy

BY JAIKUMAR VIJAYAN

The Intel-based LX50 server with Linux support that Sun Microsystems Inc. announced last week was only the opening salvo in Sun's plan to use open-source technology to capture more market share in "edge server" applications.

The company also plans to take advantage of open-source software — such as the Apache Web server, MySQL database and PHP scripting language — as part of its effort to position the LX50 for uses such as Web caching, firewalls and streaming media.

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Sun's value-add in the Linux market comes from its bundling approach, said Michael Prince, CIO at Burlington Coat Factory Warehouse Corp., a major Linux and Sun Solaris user in Burlington, N.J. By packaging a bundle of open-source software with the LX50, Sun is freeing users from having to do so themselves, Prince said.

"Sun has traditionally bundled a lot of very good things with Solaris," he said. "If it does the same thing with Linux, we would be delighted."

The University of Delaware in Newark is now considering where it might make sense to use Sun's Linux offering, said Daniel Grim, executive director of network and systems services at the school.

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"From my perspective, it's a little odd to see a product like the LX50 that is much more costly than low-end SPARC servers," he said. But the LX50 might be a good fit for users who want better raw performance than Sun's entry-level Solaris boxes offer, he added.

Multipronged Approach

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In the middle tier, Sun hopes to use its Java-based Sun Open Network Environment (ONE) server software stack to help firms Web-enable their applications. Schwartz said Sun plans to port the Sun ONE line, which includes application, portal and messaging servers plus other products, to the LX50 by early next year.

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SPOTLIGHT ON LINUX

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IBM Tries to Tempt Solaris Users to Make Linux Switch

Market-share fight with Sun escalates

BY JAIKUMAR VIJAYAN

IBM last week launched a migration program aimed at luring users of Sun Microsystems Inc.'s Unix servers to convert to Linux systems built around Intel processors.

The new program escalates an already intense rivalry between the two server vendors. IBM and Sun have been targeting each other's users with similar migration incentives as part of a pitched battle for Unix server market share. Now IBM is adding Linux technology to the fray.

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IBM will deploy what it's referring to as a "SWAT team" of systems architects, database administrators and project managers to help users with Linux testing and deployment work. In addition, IBM announced a preconfigured Linux server cluster and several new systems that can run either Linux or Windows.

IBM will also help software vendors convert their Solaris-based applications. QualTel Inc., a Portland, Ore.-based maker of messaging software for telecommunications companies, is taking advantage of the IBM program to migrate its products to Linux. That will let QualTel offer lower-cost options at a time when its users are demanding them, said John Pucknell, the firm's chief technology officer. "With the telecom industry downturn, most of our customers are looking for ways to cut costs," he said.

But Shahin Khan, Sun's chief competitive officer, dismissed the IBM program as a "lame" response to Sun's introduction last week of its LX50 low-end server, an Intel-based system that can run either Linux or Solaris (see story above).

"There's very little to it — just a couple of products and a lot of people," Khan said. "What's driving the IBM effort is that we have a Linux offering and we didn't have one before. That changes the game."

Sun has its own migration program, called Blue Away, that was initially aimed at IBM mainframe users and then extended earlier this year to include users of IBM's Intel-based Non-Uniform Memory Architecture servers after the systems were discontinued. IBM, in turn, has other programs targeting Sun.

Such migration services make sense in some situations but not all, said Charles King, an analyst at The Sageza Group Inc. in Mountain View, Calif. Switching from one low-end server to another is relatively easy, King said.

But with high-end applications, "the technical complexity involved in migrating everything to a different environment is not trivial," King said.

In a related development, Hewlett-Packard Co. unveiled a software porting assessment service aimed at Unix users — including those on Solaris and IBM's AIX — that are considering migrating to Linux. HP also detailed a disaster recovery and business continuity service for Linux systems. ◗

System Moves

In addition to the Solaris migration program, IBM announced the following eServer hardware offerings:

X335: a rack-optimized system that supports two of Intel's server-oriented Xeon processors

X305: a smaller-footprint rack server based on a single Pentium 4 chip

X205: a uniprocessor tower server that also uses the Pentium 4

CLUSTER 1350: an integrated Linux cluster that includes the x335 and x345 servers, Red Hat Linux and IBM's cluster management software

AT DEADLINE

Microsoft Patches Win 2k, SQL Server

Microsoft Corp. issued a pair of software patches designed to plug security holes in Windows 2000 and its SQL Server database. The Windows 2000 flaw affects the operating system's Network Connection Manager component and was given a "critical" severity rating by Microsoft. The database vulnerability, rated "moderate," involves stored procedures built into SQL Server 7.0 and SQL Server 2000.

CSC Offers Worker Leaves to Cut Costs

Computer Sciences Corp. (CSC) said it's offering voluntary extended leaves to all of its 66,000 employees as part of an ongoing effort to cut costs. Workers who sign up could take leaves of at least six months while continuing to receive 20% of their pay. The El Segundo, Calif.-based IT services firm said it hasn't set a goal for how many workers it wants to see take leaves.

Maxtor Pulls Out Of NAS Business

Milpitas, Calif.-based Maxtor Corp. said it plans to drop out of the network-attached storage (NAS) market and focus on its disk drive business. Sales of the company's MaxAttach NAS devices are being halted, but Maxtor said it will support users through the end of their contracts. It cited lower-than-expected sales and competition with key buyers of its disk drives.

Short Takes

ELECTRONIC DATA SYSTEMS CORP. completed its purchase of the managed hosting business of Sunnyvale, Calif.-based LOUD-CLOUD INC., which has renamed itself OPSWARE INC. . . . ORACLE CORP. said it will release a guide to its software licensing policies on Aug. 28 [QuickLink: 32248].

Congress May Bear Brunt of H-1B Anger

Grass-roots objections to visa program conflict with lobbyist efforts to raise cap

BY PATRICK THIBODEAU
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All Wrapped Up

Sun plans to preload the following software with the LX50:

Sun-developed products
- Java 2 Standard Edition
- Sun ONE Active Server Pages for Linux
- Sun Grid Engine for building grid computing clusters
- Sun Streaming Server for media streaming uses

Open-source technology
- Apache Web server
- MySQL database
- TomCat version of Java Server Pages
- WU-FTP file transfer software

Other products
- Sendmail e-mail server
- BIND Domain Name System server

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IBM will deploy what it's referring to as a "SWAT team" of systems architects, database administrators and project managers to help users with Linux testing and deployment work. In addition, IBM announced a preconfigured Linux server cluster and several new systems that can run either Linux or Windows.

IBM will also help software vendors convert their Solaris-based applications. QualTel

Inc., a Portland, Ore.-based maker of messaging software for telecommunications companies, is taking advantage of the IBM program to migrate its products to Linux. That will let QualTel offer lower-cost options at a time when its users are demanding them, said John Pucknell, the firm's chief technology officer. "With the telecom industry downturn, most of our customers are looking for ways to cut costs," he said.

But Shahin Khan, Sun's chief competitive officer, dismissed the IBM program as a "lame" response to Sun's introduction last week of its LX50 low-end server, an Intel-based system that can run either Linux or Solaris (see story above).

"There's very little to it — just a couple of products and a lot of people," Khan said. "What's driving the IBM effort is that we have a Linux offering and we didn't have one before. That changes the game."

Sun has its own migration program, called Blue Away, that was initially aimed at IBM mainframe users and then extended earlier this year to include users of IBM's Intel-based Non-Uniform Memory Architecture servers after the systems were discontinued. IBM, in turn, has other programs targeting Sun.

Such migration services make sense in some situations but not all, said Charles King, an analyst at The Sageza Group Inc. in Mountain View, Calif. Switching from one low-end server to another is relatively easy, King said.

But with high-end applications, "the technical complexity involved in migrating everything to a different environment is not trivial," King said.

In a related development, Hewlett-Packard Co. unveiled a software porting assessment service aimed at Unix users — including those on Solaris and IBM's AIX — that are considering migrating to Linux. HP also detailed a disaster recovery and business continuity service for Linux systems. ▶

System Moves

In addition to the Solaris migration program, IBM announced the following eServer hardware offerings:

X335: a rack-optimized system that supports two of Intel's server-oriented Xeon processors

X305: a smaller-footprint rack server based on a single Pentium 4 chip

X205: a uniprocessor tower server that also uses the Pentium 4

CLUSTER 1350: an integrated Linux cluster that includes the x335 and x345 servers, Red Hat Linux and IBM's cluster management software

Sun Unifies Software Teams, Aims at Rivals

New group's chief says portal server,
Solaris bundling play key roles in strategy

BY ELIZABETH HEICHLER

At the start of Sun Microsystems Inc.'s fiscal year in July, **Jonathan Schwartz** officially became executive vice president of a new group that combines all of the company's software operations under one umbrella. Naysayers have cast doubts on Sun's efforts to position itself as more than a hardware vendor. In an interview, Schwartz, who has worked at Sun since 1996, discussed his strategy for making the company more of a software force.

Q&A

In what direction are you taking your application server and portal server products? I think the strongest evolution of the app server is the realization that the majority of applications are being written to the portal. And so we've put an enormous amount of effort into delivering an award-winning portal server.

Our app server has been No. 3 in a market of three, with BEA and IBM No. 1 and No. 2. But the portal server is an entirely different marketplace, where we're way ahead of the other two. And we see that as a platform that application developers can use to expose business systems to the Web and the [end] users.

Will you continue to bundle more technology into Solaris, as you did by putting your application server into Version 9 of the operating system? Sure. I think customers are really asking for us to simplify their lives, and there's a few core applications which they are comfortable having delivered from the operating system provider. The core application infrastructure — the directory server, the application server, the Web server, the core database for edge applications specifically — really gives us an opportunity to redefine what is the operating platform.

We're not using it as Microsoft does, to go decimate people out of the marketplace. But I think there's ample opportunity for us to . . . look opportunistically at other application services as they become a part of the horizontal infrastructure.

How has your business relationship with BEA Systems changed since you began bundling the application server into Solaris? It hasn't. We were very upfront with BEA all along that we were ultimately going to bundle a low-end J2EE app server. And that necessitated their moving higher up the [software] stack and delivering higher-value management services or development tools. We've been very upfront with them; they knew it.

What will we see from the software group at the SunNetwork conference next month? You're likely to see a more complete software strategy rollout, because that's going to really be our coming out.

There's a concern that standards efforts for Web services are fragmenting between the Liberty Alliance, in which Sun played a founding role, and the Web Services Interoperability Organization (WS-I) that was founded by IBM and Microsoft, among others. What's it going to take to get everyone to cooperate? Well, we would love to join WS-I as a founder. We're not comfortable having IBM and Microsoft dictate the standards, which they've begun to do.

What we would also love to do — and this is speaking as Sun and not as the Liberty Alliance, because I'm only one member of many — we would love to have IBM and Microsoft join the Liberty Alliance. We've extended the invitation, and the invitation is still open.

So, what do I think about it? I think they're being childish. I think they're also beginning to spook the industry a little bit. I was just with an industry analyst who told me that Microsoft and IBM had come in to do a joint update. Well, sorry; when you have two monopolists walking in to say they'd like to tell you how the IT industry is going to be run, how do you think customers are going to feel about that? Not great.

Ed Zander stepped down as Sun's president and chief operating officer at the end of June [QuickLink: 29438]. Is there an expectation that he's going to be replaced, or is CEO Scott McNealy going to continue handling those jobs as well? When the organizational change was made, Scott brought his new staff into a room and said, "Folks, my job didn't change — yours did." So he's comfortable with his new organization. I think we're operating with a much higher degree of pace and a sense of urgency around what we're doing, in part because there's just a lot more visibility.

If you look at my org chart, you'll see a very, very flat one. I think I have probably 16 or 17 direct reports at this point. And that means I know a lot about all of those businesses now and can really stay in touch with the strategies as they evolve. So it's a long way of saying no, I don't think Ed's going to be replaced. ▶

Heichler is an editor for the IDG News Service.

Former HP Exec Now CEO Of Networking Start-up S2io

Company to debut
10G Ethernet wares

BY STEPHEN LAWSON

Dave Zabrowski, formerly a top executive in Hewlett-Packard Co.'s PC operations group, has left the company to head S2io Technologies, a start-up specializing in 10G bit/sec. Ethernet products for corporate networks.

Zabrowski will be president and CEO of S2io, which early next year plans to introduce network interface cards (NIC) that use the 10-Gigabit Ethernet standard. The Cupertino, Calif.-based company aims to bring the Ethernet interconnects between data centers and enterprise LANs and WANs up to speed with high-speed I/O technologies that are now emerging inside data centers, Zabrowski said.

Zabrowski said the process of merging HP with Compaq Computer Corp. gave him an impetus to leave, although the 16-year HP veteran noted that he had been seeking a more entrepreneurial opportunity before the acquisition.

Zabrowski was vice president and general manager of HP's personal computing organization in Roseville, Calif. In that role, he said, he was responsible for commercial desktops, notebooks and handheld computers, as well as servers based on Intel chips and Windows, for North America.

"With the merger with Compaq, there were decisions made as to which products and which businesses were going to be Compaq-led and which would be HP-led, and market positions tended to dominate those decisions, [and in the PC organization] most of those posts went to Houston," he said, referring to Compaq. Zabrowski added that he agreed with those decisions.

"For me, the timing was convenient," said Zabrowski, who left HP earlier this month.

S2io has developed its own application-specific integrated circuit (ASIC) for 10G bit/sec. Ethernet and intends to sell NICs built around that ASIC under its own name. The company is also considering other arrangements involving the use of its technology, he said.

S2io was founded last September and currently has about 40 employees.

Intel Corp. earlier this year demonstrated a 10G bit/sec. Ethernet NIC and said it expected to ship the product in volume to server makers by the end of next month. Intel's aggressive move into the new technology, which included massive investments and acquisitions to develop optical networking components, doesn't scare Zabrowski.

"If the customers say we have superior technology, we will be in a leading position," he said. ▶

> **"**
> If the customers say we have superior technology, we will be in a leading position.
>
> **DAVE ZABROWSKI, S2IO**

Lawson writes for the IDG News Service.

Oracle vs. BEA Web Services

Features	BEA	Oracle
Model Web Services	✔	✔
Develop EJB for Building Web Services	○	✔
Develop JSP & Servlets for Building Web Services	○	✔
Debug Remote Web Services	○	✔
Profile Web Services Performance	○	✔
Optimize Web Services Code	○	✔
Validate XML for Web Services	○	✔
Support Web Services Team Development	○	✔
Deploy Web Services to:	WebLogic Only	Any J2EE Server

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NEWS

BRIEFS

IBM Says 15,600 Jobs Cut in Q2

IBM laid off about 15,600 workers during the second quarter, according to a filing it submitted to the U.S. Securities and Exchange Commission. The cuts reduced the company's 320,000-person workforce by 5% and primarily involved its IT services unit, which let go more than 14,000 employees. The filing was the first time IBM disclosed the full extent of its layoffs.

Dell Results Up For Second Quarter

Bucking the trend of tough financial results, Dell Computer Corp. reported a net profit of $501 million on revenue of $8.45 billion for its second quarter ended Aug. 2. The revenue total was up 11% from $7.6 billion in the same quarter last year. The company predicted third-quarter revenue of about $8.9 billion, which would represent an increase of 19% year over year.

Microsoft, HP Expand Help Desk Contract

Hewlett-Packard Co. said it won a contract to provide end-user technical support to 61,000 Microsoft Corp. employees, vendors and contractors. The deal expands a 2-year-old contract under which HP handled help desk support for 11,000 Microsoft workers in Europe, the Middle East and Africa. The companies didn't disclose the financial terms of the new contract.

Short Takes

After its initial bid was rejected, NETWORK ASSOCIATES INC. in Santa Clara, Calif., increased its offer to buy the 25% of MCAFEE.-COM CORP. in Sunnyvale, Calif., that it doesn't own. . . . Ottawa-based COGNOS INC. today plans to release Web services integration technology for tying its data analysis tools to other applications.

IT Investments Grounded At USAir, Other Carriers

Short-term cash crisis puts cost-cutting, revenue-generating projects on hold

BY THOMAS HOFFMAN

AFTER announcing plans to file for Chapter 11 bankruptcy protection last week, officials at US Airways Group Inc. said the airline isn't involved in any significant IT projects that would place a financial drain on the company.

Problem is, analysts said, most major carriers like Arlington, Va.-based USAir are facing a short-term cash crunch that has led them to avoid making significant IT capital expenditures that could help them cut costs or increase revenues.

"The reality is that the impact [of the airline industry's financial downturn] is like a cold shower. I can't imagine any major airlines making any significant investments in IT right now, let alone other areas of their organizations," said

AIRLINE INDUSTRY

Philip Wolf, president and CEO of PhoCusWright Inc., a Sherman, Conn.-based travel strategy and research firm.

USAir does "need to invest in key IT programs aimed at helping them reduce their costs," said Henry Harteveldt, an analyst at Forrester Research Inc. in Cambridge, Mass. For instance, USAir is one of the few major carriers that doesn't send wireless electronic flight alerts to passengers notifying them about departure or arrival delays. Such a system could save USAir up to $500,000 annually in costs, said Harteveldt. United Air Lines Inc., American Airlines Inc. and Delta Air Lines Inc. have such systems.

In addition, USAir and other carriers would be wise to consider Orbitz LLC's upcoming Web-based service, Harteveldt said. The service would pro-

vide a conduit for travel agents to book flights directly and prevent airlines from having to use more expensive global distribution systems (GDS) such as that of Sabre Holdings Corp., he said.

According to Harteveldt, the top nine carriers in the U.S. last year collectively spent $1.4 billion to $1.7 billion in booking fees through GDSs — paying $12 to $17 per transaction, in addition to fees they have to pay GDSs for canceled flights.

Harteveldt estimates that USAir spent $225 million to $250 million in booking fees to GDSs last year. Chicago-based Orbitz, which hasn't announced when its system will launch, expects to have three to five major carriers using the system by year's end, he said.

"Academically, one could argue that this is the perfect time to automate and upgrade," said Wolf. "But I think 'long term' is very difficult for many airlines right now. They have to focus on their customers, keeping their costs down and managing their yields."

It's for those very reasons

that Harteveldt said he believes USAir needs to ensure that it has the right revenue management, yield management and customer relationship management systems in place to properly segment its customers and offer flight packages based on their travel histories.

"It's imperative for the bean counters to resist cutting back on spending for IT," Harteveldt said, "since it can lead to a more efficient airline." ▶

USAir-EDS Deal Remains on Course, for Now

Although US Airways doesn't appear to be investing in any significant new IT projects, the maintenance and support of its existing operations by Electronic Data Systems Corp. should continue without a blip.

EDS manages the bulk of USAir's IT operations under a multiyear outsourcing agreement that the Plano, Texas-based IT services giant inherited through its acquisition of Sabre's IT outsourcing business in July 2001.

Under the agreement, which USAir struck with Sabre in August 1997, USAir pays EDS approximately $200 million per year to run all of its computer operations. That includes the mainframes and midrange computers used for flight planning, crew scheduling and reservations, as well as application development and Web hosting services, according to an EDS official.

Currently, USAir owes EDS roughly $70 million for prebankruptcy bills. But the EDS spokesman said the services firm expects to "continue to run those systems postbankruptcy and be paid for those services."

— Thomas Hoffman

Despite Economy, IT Projects Take Off at America West

While the bulk of the industry remains in an economic tailspin that threatens to kill most new IT projects, the nation's eighth-largest airline is an exception.

America West Airlines Inc. in Phoenix recently completed the first phase of a long-term effort to help online customers find the lowest fares possible, improve customer service for frequent fliers and increase revenue along the way. "Online is our lowest-cost distribution channel, and we want to shift as much of our volume there as possible," said Lloyd Parker, vice president of distribution at America West.

To accomplish that goal, America West outsourced its domestic and international online pricing and flight

planning search engine to ITA Software Inc. in Cambridge, Mass.

From its data center in Boston, ITA processes all of the airline's online shopping requests for flight availability, pricing and seat availability.

America West is also taking steps to address the hassles that come with the post-Sept. 11 flying experience with the help of customer relationship management (CRM) software from Menlo Park, Calif.-based Kana Software Inc. The software, Kana Response, is a widely used e-mail management system.

"E-mail accounts for the vast majority of the responses we see from customers," said Parker. "But now the customer can send us e-mail on just about anything, and we're able

to customize the message based on the specific department that handles that issue."

The airline declined to discuss spending or savings figures associated with its investments.

Chris Schutte, a travel industry analyst at PhoCusWright, said the significance of these two projects isn't in the selection of software, but in the timing of the rollouts. "Most airlines are already using advanced CRM tools," he said. "But its mostly the large airlines that are in trouble now. For the smaller airlines like America West, it's a good time to expand better service offerings and squeeze out any inefficiency they might have in their distribution system."

— Dan Verton

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Verizon Thinks Smaller

Services unit sets sights on small, midsize customers

BY LUCAS MEARIAN

VERIZON Communications' IT outsourcing unit, which is trying to compete for business against larger vendors, is revamping its marketing efforts to focus mainly on deals with small and midsize companies.

Verizon's outsourcing business, which has only 250 dedicated workers, is now split about equally between companies with more than $1 billion in annual revenue and businesses with revenues below that mark.

But the company wants to change its customer mix to an 80/20 split in favor of the smaller firms, said Del Jenkins, vice president of IT services at Verizon Information Technologies Inc. in Tampa, Fla.

Jenkins said that the middle market is being overlooked by outsourcing giants such as IBM and Electronic Data Systems Corp., giving smaller vendors such as Verizon a better chance to win contracts. And from the user's perspective, CIOs at many midsize companies "are looking at an aging workforce that's not up to speed with the latest technology," he said.

Howard Rubin, an analyst at Meta Group Inc. in Stamford, Conn., said Verizon's focus on smaller outsourcing customers is indicative of a larger trend at companies that have tried to use their large internal IT resources to set up external businesses. Rubin cited Atlanta-based Delta Technology Inc., the IT services unit of Delta Air Lines Inc., as another example.

Help on Hand

At Verizon, the number of employees who work directly for the outsourcing unit is relatively small. But Jenkins said Verizon Information Technologies can tap about 10,000 IT workers throughout its New York-based parent company's operations to help service outsourcing clients. The unit has about 60 customers, he said.

Elmer Meider, CEO of Highlights for Children Inc. in Columbus, Ohio, said it was a difficult decision to outsource the publisher's mainframe and distributed systems to Verizon three years ago, because he generally likes to keep all operations internal. But once the decision was made, Meider said, he wanted to sign on with a vendor that was large enough that it could ensure it would be able to fulfill the contract. "I'm not sure you save that much money" by outsourcing, he noted. "But you have resources at your disposal that you would not otherwise have."

However, Verizon's reputation as a big telecommunications company could be a disadvantage when it comes to wooing smaller companies for outsourcing deals, according to Laurie Seymour, an analyst at IDC in Framingham, Mass.

Seymour said she likes Verizon's business strategy because midsize firms are increasingly looking to save money by outsourcing IT operations. But she added that many of them prefer to work with smaller IT service providers that can provide a good deal of "hand-holding." ▶

IBM, BNSF Ink 10-Year Outsourcing Deal

Railroad's aim is to focus on core business

BY LINDA ROSENCRANCE

Burlington Northern and Santa Fe Railway Co. (BNSF) has signed a 10-year deal to outsource its IT infrastructure to IBM. Specific financial terms weren't disclosed, but Richard Russack, a spokesman for Fort Worth, Texas-based BNSF, said the deal is worth "hundreds of millions of dollars."

Under the deal, which takes effect Sept. 1, IBM will manage BNSF's mainframe, its 450 midrange Intel and Unix servers, and about 16,000 desktop, laptop and LAN printers, said Buddy Meyers, managing principal of the Transportation Consulting Group at IBM Global Services.

IBM will run BNSF's data centers in Topeka, Kan., and Fort Worth, although BNSF will retain ownership, he said. BNSF will also receive access to IBM's Center of Transportation, a think tank in Boulder, Colo.

IBM, which has had a long relationship with BNSF, will manage the railroad's e-mail systems and help desk. Application development isn't part of the contract, Meyers noted.

BNSF CIO Greg Fox said turning to a technology partner made sense because the railroad had taken its IT infrastructure as far as it could go on its own. BNSF realized that it would save money by outsourcing IT and focusing on its core competency, he said.

Fox said he hopes the transportation center will be a springboard for developing a common IT infrastructure and common applications for the entire railroad industry, not just BNSF, to make it easier for customers to do business with large Class I railroads.

John Fontanella, an analyst at AMR Research Inc. in Boston, said it makes sense for BNSF to outsource management of its infrastructure while keeping control of its mission-critical applications. But he was skeptical about BNSF's lofty goal of a common IT infrastructure for Class I railroads. "I have never seen any examples in any industry of building common platforms and common applications," he said. ▶

GOING PLACES

For more on IT in the transportation industry, visit our Knowledge Center:

QuickLink: a2430
www.computerworld.com

Candle Adopts SOAP for Mainframe Management

BY MARK HALL
SAN FRANCISCO

SOAP will be cleaning up mainframe integration issues for Candle Corp.'s system management automation users, the company announced at its user conference here last week.

The El Segundo, Calif.-based vendor said it will use Simple Object Access Protocol (SOAP) instead of discrete, proprietary adapters for "bidirectional" data exchange between its Omegamon and other vendors' system management products, such as IBM's Tivoli and Computer Associates International Inc.'s Unicenter.

"We're opening up the Omegamon solution set," said Mike Kott, vice president of Candle's systems and service management group.

Currently, he said, Candle has to work with each vendor to design and build adapters for sending or receiving other system management information. Alternatively, users have to build the adapters themselves.

Although the company intends to use SOAP for its data exchange, it won't make that data readily available to other vendors' products. "We're not going to give away the store," said Candle product consultant Ed Hallock.

He said only vendors and users who sign licensing agreements will get access to Omegamon data through SOAP.

Glenn O'Donnell, an analyst at Meta Group Inc. in Stamford, Conn., said Candle's move is a positive step for Web services edging into system management. "But we're a long way off from that being a reality," O'Donnell said.

Cheryl Millen, automation analyst for systems management at Insurance Corporation of British Columbia in Vancouver, said moving to industry standards such as SOAP was a good move for her company. "Otherwise, you become entrenched with one vendor and you cannot change," she said.

SOAP support will appear first in Candle's Integrated Resource Manager (IRM) Release V500, which will ship by the end of next month. IRM V500 will also include new monitoring and management capabilities for DB2 and MQSeries, and Parallel Sysplex support on IBM mainframes. ▶

INDUSTRY STANDARDS

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BRIEFS

IBM in Outsourcing Deal With Sun Life

In addition to an outsourcing contract with Burlington Northern and Santa Fe Railway Co. (see story, page 10), IBM signed a seven-year IT services deal with Sun Life Assurance Co. of Canada. IBM will manage Web hosting, mainframe and midrange servers, e-mail systems and other IT operations for Sun Life. The contract is valued at $164 million (U.S.), IBM said.

WorldCom Woes Fuel $119M Digex Loss

Digex Inc., a Laurel, Md.-based Web hosting firm that's majority-owned by WorldCom Inc., reported a second-quarter net loss of $119 million on revenue of $48.7 million. The loss included a $57 million writedown of the value of Digex's assets that was triggered by the financial problems at WorldCom. Digex said it also set aside $17.7 million to cover bills that WorldCom may not pay.

Calif. County 'Opts in' On Data Privacy

California's San Mateo County adopted an "opt-in" data privacy ordinance requiring banks and other financial institutions to get the consent of customers before sharing personal information with third parties. The measure, approved by the county's board of supervisors, is based on legislation in California's State Assembly that would impose a similar requirement statewide.

Short Takes

RLX TECHNOLOGIES INC., a Houston-based maker of blade servers, raised $15 million in financing and said that should fund its operations until it becomes profitable. . . . Beverly, Mass.-based GROOVE NETWORKS INC. today plans to ship an upgrade of its desktop collaboration software with improved ties to Notes e-mail systems.

VisualCafe

market leader, according to Mark Driver, an analyst at Gartner Inc.

Scotts Valley, Calif.-based Borland wasted no time pursuing WebGain's customers. Just two days after the Together-Soft announcement, Borland and BEA Systems Inc. in San Jose struck a deal to sell a version of JBuilder integrated to work with BEA's popular WebLogic application server.

That's a significant turn of events, since BEA was an original investor in WebGain. BEA Vice President Byron Sebastian said BEA will now recommend JBuilder, WebLogic Edition, which is due next month, as the Java IDE customers should use for its application server. BEA will continue to have partnerships with vendors such as TogetherSoft, Rational Software Corp. and Sun Microsystems Inc., however.

The BEA/Borland offering may hold some allure for companies such as The Bear Stearns Cos. in New York. A significant reason why the firm invested in VisualCafe was its good integration with BEA's WebLogic, said Sue Picus, managing director of the firm's architecture office. Other reasons included cost and its solid debugger, she said.

Picus said both the Together-Soft and BEA/Borland camps are already making "a big pitch." But, she said, "we're just laying back. What we have is meeting our needs, so there's no real reason to change." Her main concern is the level of support TogetherSoft will provide for existing tools, "as opposed to just trying to convert

the WebGain customers into using their suite."

Switching tools can have time and cost consequences.

Houston-based United Space Alliance LLC, a service contractor for NASA, used Visual-Cafe on a joint project with Russian developers to build an inventory management system that astronauts use on the International Space Station. Frank Wood, manager of space operations computing, said that the application is complicated and that its four developers would need months to migrate it to another tool. A particularly challenging aspect would be switching user-interface elements to the new development environment, he said.

But Wood said his company may consider moving to another tool for the support and upgrades that it needs in order to maintain its application.

Hoping for Best

Jim Jackson, manager of software development at the Birmingham, Ala., employee benefits division of SunGard Data Systems Inc., expressed hope that TogetherSoft will maintain its partnerships and bundled products and follow through on the unreleased 7.0 version of WebGain Studio.

Keith Boswell, vice president of marketing and business development at TogetherSoft, said the company will look at the 7.0 version to "see how far along it is." He said no decision has been made about whether the product will be released or whether some of its code will be transferred to Together-Soft's technology.

But Driver said he would be "completely shocked" to see TogetherSoft do anything more with the WebGain product than simple support. He recom-

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Tool Vendors Striking Deals

Most of the major development tool vendors either made announcements last week or plan to do so this week, as the great land grab for developers continues.

On the heels of its important deal with BEA Systems, Borland today will unveil an alliance with IBM that calls for 30-day trial versions of Borland's Delphi Studio Architect, C++Builder Enterprise and Kylix Enterprise tools to be bundled with the developer and personal editions of IBM's DB2 database. In return, Borland will ship its current tools with a DB2 developer edition.

"We're trying to get access to their footprint, distribution- and marketing-wise, and IBM is trying to get access to our developers," said Frank Slootman, senior vice president of products at Borland. "IBM has a desire to pursue the large base of Visual Basic Microsoft developers with its DB2 platform, and they're thinking with our products, they have a much better shot."

In February, Microsoft Corp. released its new Visual Basic .Net development tools, which promote object-oriented programming. Next week, Microsoft plans to outline the tool's future direction.

Rival Sun last week announced a connector tool that binds and encapsulates native Linux C and C++ application code so that it can be exposed as Java classes or XML-based Web services. The free tool is due for release by the end of next month to users of the Sun Open Net Environment Studio Enterprise, which sells for $1,995.

Also last week, Sun introduced 18 new modules for its free Net-Beans integrated development environment (IDE), including support for Java Data Objects, the Apache Struts framework and Java3D.

Within the next two weeks, IBM and TogetherSoft are expected to announce that the TogetherXJ modeling tool will be integrated to work with IBM's new WebSphere Studio, said Keith Boswell, a vice president at TogetherSoft. Boswell said his company's beta will be available in a couple of weeks. Final pricing hasn't been determined.

In other recent tools news, Rational Software in Lexington, Mass., announced the acquisition of Shelton, Conn.-based NeuVis Inc., which makes model-driven application development tools.
— *Carol Sliwa*

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mends that users get off Visual-Cafe within nine to 12 months.

Mike Gilpin, an analyst at Giga Information Group Inc., said it wouldn't be unreasonable for corporate users to wait six months to see what happens. "TogetherSoft does make good development tools, so at least it's the right kind of general company to take over the care and feeding of the product," he said.

WebGain's slow demise has been apparent to many users for at least six months, but a WebGain spokeswoman said

the San Jose company continues to operate, with a "greatly reduced staff." She said Web-Gain has one product, Application Composer, that it's trying to sell, and the company continues to receive revenue, pay bills and work on "postsale support obligations." Prior to the TogetherSoft deal, Oracle Corp. acquired WebGain's Top-Link object-to-relational mapping framework in June.

WebGain cited growing competition and depressed IT spending as factors in its decision to leave the tools market. ▶

RISE AND FALL

WebGain, a start-up formed by Warburg Pincus Ventures and BEA Systems, acquires VisualCafe from Symantec.

WebGain launches flagship product, WebGain Studio. WebGain acquires Tendril StructureBuilder, a suite of tools for designing and deploying Enterprise JavaBeans.

WebGain acquires TopLink, an object-to-relational database mapping framework, from The Object People.

WebGain acquires Java application assembly technology from Zat.

WebGain acquires Bloomsbury Software, establishing professional services for Europe.

Intel Capital invests in WebGain.

WebGain withdraws registration of initial public offering.

Oracle acquires WebGain's TopLink product line.

TogetherSoft acquires Web-Gain Studio.

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Regulators Push External Privacy, Security Audits

Independent reviews can ensure adherence to policy, but not all companies need them

BY PATRICK THIBODEAU
WASHINGTON

FEDERAL REGULATORS are beginning to force companies to conduct independent audits as part of settlements in cases involving alleged privacy and security violations, and it's prompting firms to consider whether they should heed the message about the need for outside audits.

The U.S. Federal Trade Commission's (FTC) deal with Microsoft Corp. this month to settle a privacy complaint over its Passport authentication service is a high-profile example of the government's preference for independent audits. But while corporate officials and analysts see a clear trend by regulators and courts to require independent audits to settle privacy or security cases, there's no consensus about whether that's the best move.

"Independent eyes tend to strengthen the credibility of the results of the review," said Lisa Murtha, chief auditor and compliance officer at The Children's Hospital of Philadelphia and a board member of the International Association of Privacy Officers. The hospital is using independent auditors.

But Procter & Gamble Co. is relying on its internal auditing department to review its privacy practices. Mel Peterson, chief privacy officer at the Cincinnati-based consumer prod-

ucts giant, said he believes that the company's internal auditors can do a better job than someone from outside could.

"We know our guidelines, I think, better than anyone, and we also know our organization very well," said Peterson. The company's internal auditors "uncover details that someone who is not so familiar with P&G systems ... would not necessarily find," he said.

Settlement Term

Audits of privacy and security practices enlist many departments within a company, including IT, and involve verification of written policies and state and federal laws against actual system operations.

The requirement for independent audits is becoming a common legal settlement tool. For instance, in March a civil privacy case against online net-

work advertiser DoubleClick Inc. was settled with a requirement for an audit. And an FTC settlement in January with Eli Lilly and Co. for its release last year of the e-mail addresses of nearly 700 customers collected through its Prozac.com Web site requires an annual written review of its practices by "qualified persons."

Some consumers would like companies to get an outsider's perspective. About two-thirds of 1,529 adults surveyed by Rochester, N.Y.-based Harris Interactive Inc. for nonprofit think tank Privacy & American Business cited an independent audit as the best step a company could take to build trust.

The message, said Alan Westin, who heads the privacy organization, is that independent audits could improve companies' relationships with customers.

With an independent audit, "people would be more likely to give their personal information to a Web site" and be more likely to buy products and services, he said.

One thing is certain: If a company is facing court or regulatory action, it may well be forced to hire an independent auditor as part of any settlement.

"The message is, if you don't clean your own house first, you are going to be required to have others clean it for you," said Ray Everett-Church, chief privacy officer at ePrivacy Group Inc., a Paoli, Pa.-based consulting organization. ▶

Warchalkers

meal, or the way spies mark drop locations for exchanging packages. Although the markings can be used for legitimate purposes, such as denoting a free public-access point, officials fear that the markings being made on corporate buildings will enable hackers, and possibly even terrorists, to more easily locate vulnerable wireless LANs.

The threat posed by warchalking, however, goes far beyond what might be considered isolated incidents of scanning for the presence of wireless networks.

"In Pittsburgh, the individuals are essentially attempting to map the entire city to identify the wireless access points," Shore said in an interview last week. He said there have been no reports of buildings in Pitts-

burgh being physically marked like some in other parts of the country. However, Web sites have popped up that provide interactive digital maps denoting the precise locations of dozens of Wi-Fi access points in cities such as Pittsburgh, Philadelphia, Boston and Berkeley, Calif., as well as regions of northeast Texas and on various college campuses.

For example, a Web site called Zhrodague Wireless Maps allows war drivers —

Open node	X
Closed node	⊗
WEP node	⊗ (hatched)

These markings are being used on buildings by warchalkers to note wireless access points' status.

those who search for wireless networks — to submit output from their war-driving escapades and then create digital street-level maps that show the location and signal strength of 802.11b access points. In some cases, satellite photos are used.

The site, which advertises itself as a service that puts "Wi-Fi on the map," includes more than 28,000 entries from war-driving results in Boston alone.

Terrorist Aid?

Shore acknowledged the threat such markings and Web sites pose to ongoing criminal and counterintelligence investigations, especially antiterrorism investigations.

The ability of criminals and terrorists to spot the markings and then use vulnerable corporate wireless networks for anonymous Internet access "poses a real problem" for law enforcement, he said.

But William Harrod, director of the investigative re-

sponse division at TruSecure Corp. in Herndon, Va., and a 14-year veteran of the FBI, downplayed the security significance of warchalking. He said that terrorists or serious criminals are unlikely to rely on it for identifying access points.

Harrod also downplayed the utility of having online interactive maps for terrorist activities. "It's not terribly hard to find access and gain that access," he said.

Other security experts take the matter more seriously.

Steve Ocepek, chief technology officer at San Francisco-based wireless security consulting firm Wholepoint Corp., said warchalking is a growing phenomenon that definitely poses a security risk.

"It makes it that much easier for a hacker to launch an attack," said Ocepek, adding that online mapping can also be another important planning tool in a potential terrorist's toolbox. "Wireless is a perfect way

> ## Wireless is a perfect way to make yourself anonymous.
>
> **STEVE OCEPEK, CHIEF TECHNOLOGY OFFICER, WHOLEPOINT CORP.**

to make yourself anonymous."

Thubten Comerford, CEO of White Hat Technologies Inc., a Westminster, Colo.-based security firm, agreed that warchalking and online warchalk maps make an already dangerous problem worse. "The risks to companies and organizations is enormous," Comerford said. "Anyone could launch an attack ... without much fear of being traced." ▶

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Lawson User Settles Suit, Drops HR Apps

BY LINDA ROSENCRANCE

TeamStaff Inc., a human resources outsourcing and temporary staffing firm, last week said it has settled a breach-of-contract lawsuit that it filed against Lawson Software Inc. last month. But TeamStaff added that it's reducing the scope of a planned project involving Lawson's business applications.

Somerset, N.J.-based TeamStaff, which had revenue of about $500 million in the first nine months of its current fiscal year through June 30, said it will keep the financial applications it licensed from St. Paul, Minn.-based Lawson last August. But the company plans to return Lawson's payroll and human resources software and look elsewhere for that technology.

TeamStaff's lawsuit, filed in U.S. District Court in New Jersey, alleged that the latter applications didn't work as promised. When it signed the licensing deal, TeamStaff planned to consolidate multiple systems used by its human resources outsourcing unit onto a single technology platform built around Lawson's applications. The outsourcing unit handles human resources for about 3,700 small and midsize businesses with a total of more than 55,000 employees.

Specs Unmet

TeamStaff claimed in its suit that the software didn't conform to a list of 300-plus functionality specifications built into its contract. The company also contended that Lawson knew it couldn't meet TeamStaff's requirements and had refused to provide fully functional software under the original terms of the contract.

Donald Kelly, TeamStaff's chief financial officer, said financial terms of the settlement aren't being disclosed. He added that TeamStaff plans to start implementing Lawson's financial applications early next year and is currently evaluating human resources software from other vendors.

Lawson is "pleased that we were able to reach a friendly resolution" that keeps TeamStaff as one of its customers, said Terry Blake, a spokesman for the software vendor. "We're looking ahead to working with TeamStaff to implement Lawson's financials," he said.

David Caruso, an analyst at AMR Research Inc. in Boston, said lawsuits such as the one filed by TeamStaff are usually the "last, last resort" for companies that are having problems with software vendors.
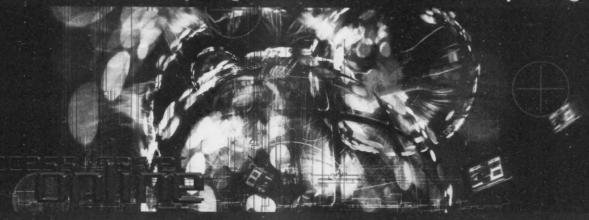
"Before they get to lawsuits, they've tried to sort out their differences," Caruso said. "But business applications are so complicated that it's difficult to have every expectation met perfectly every time." ▶

PC Disk Drive Technology Heads to Data Centers

New serial technology to give ATA drives a performance boost

BY LUCAS MEARIAN

For companies seeking to store mission-critical data, disk arrays configured with SCSI-attached drives have typically been the only game in town. Lower-cost drives based on the Advanced Technology Attachment (ATA) standard, while plentiful in PCs, lacked the performance and reliability needed at the data center level.

In recent months, however, vendors such as EMC Corp. and Network Appliance Inc. have begun building ATA drives into storage devices. Now the advent of serial ATA technology is expected to boost data throughput rates from the 100MB/sec. that parallel ATA drives are capable of to 150MB/sec., and eventually to 600MB/sec.

Sunnyvale, Calif.-based 3Ware Corp. last week announced a serial ATA RAID controller that it said provides SCSI-like performance at ATA prices. And San Jose-based Fujitsu Computer Products of America said it plans to ship serial ATA drives by year's end.

ATA drives still run more slowly than their SCSI counterparts. But storage vendors can profitably sell disk arrays built around ATA drives at a per-megabyte price that's about half what it costs to buy a low-end array based on SCSI drives, said Bob Zimmerman, an analyst at Giga Information Group Inc. in Cambridge, Mass. "There are some real price advantages," he said.

ATA technology won't push high-end SCSI arrays such as EMC's Symmetrix boxes out the doors of data centers, he added. But ATA drives should be good enough for use in disk-to-disk data backup applications, Zimmerman said.

Scott Studham, group leader of the molecular science computing facility at

STORAGE

> ### WHAT IT MEANS
>
> **ATA is an interface** *that* **connects a computer's system bus to disk storage devices.** *Drives built to the standard, which is also known as* **Integrated Drive Electronics,** *have mainly been used in PCs to date. Framingham, Mass.-based IDC estimates that* **87% of all drives being shipped now use ATA.**

the U.S. Department of Energy's Pacific Northwest National Laboratories in Seattle, finished replacing a 20TB tape archiving system with servers that use parallel ATA drives last week. "It's disk speed at tape cost," he said. "I'm totally in love with this."

Studham uses 3Ware's RAID controller card to provide a level of redundancy for his ATA disk farm. The molecular science group's primary data storage is handled by a high-end disk array made by Compaq Computer Corp., which is now part of Hewlett-Packard Co. But Studham said he expects to replace that with serial ATA technology "in a couple years from now." ▶

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Domain Name Case Moves to Appeal Stage

Porn Web site owner seeks to sue VeriSign over ownership transfer

BY PATRICK THIBODEAU

In what could be a landmark case in Internet law, the U.S. Court of Appeals in San Francisco last week heard arguments over whether VeriSign Inc. can be sued for damages for transferring a domain name to a person who forged a letter authorizing the change.

The case could open the door to other lawsuits over mishandled domain names and make such mistakes very expensive for the companies that manage domain-name registries.

Gary Kremen, owner of the pornographic sex.com Web site, has spent seven years and $3.4 million in legal fees fighting a battle that started when the domain name was taken away from him. Two years ago, Kremen won a partial victory when a U.S. District Court judge in San Jose ordered sex.com returned to his company, San Francisco-based Grant Media LLC. He was also awarded $65 million in damages from the forger, which he hasn't collected.

The Court Isn't Convinced

But Kremen failed to convince the court that the former Network Solutions Inc., now part of Mountain View, Calif.-based VeriSign, was liable for its actions. The judge ruled that the company's role in the matter was limited under law. In last week's appeal hearing, Kremen sought the right to bring VeriSign to trial in an effort to force it to pay millions of dollars in damages.

VeriSign "just can't hold up their hands and say, 'We have no liability for mistakes,'" Kremen said. "Their argument is, 'We can turn off anyone's domain at any time.' Imagine if they did that to IBM. It's ridiculous."

VeriSign officials declined to comment on the case last week. But in legal papers, the company has raised a range of arguments against Kremen's claims, including the question of whether a domain name is real or intangible property. The trial judge in the case ruled that it's the latter.

However, Kremen's appeal has found support from advocacy groups such as the Washington-based American Internet Registrants Association (AIRA) and the San Francisco-based Electronic Frontier Foundation. Both filed legal briefs backing his position.

The stakes "are very substantial," said William Bode, an attorney who represents the AIRA. If the appeals court rules in Kremen's favor, Bode said he expects "to see dozens and dozens of lawsuits filed" against VeriSign. ▶

NEWS

Vendors Push Apps to Better Secure E-Mail

Software enforces messaging policies

BY JAIKUMAR VIJAYAN

Omniva Policy Systems this week plans to join a small but growing number of vendors that are offering software for managing and securing corporate e-mail communications against misuse and snooping.

The San Francisco-based start-up today is due to formally release its Omniva Policy Manager Enterprise Edition software, which is designed to let companies that use Microsoft Corp.'s Outlook e-mail client software enforce message confidentiality and data-retention policies.

John Dawes, a vice president at Omniva, said the software provides a way to centrally control access to confidential e-mail, prevent the printing or forwarding of sensitive material and set expiration dates on messages in order to protect data. It also lets users encrypt messages while e-mail is in transit, Dawes said.

Omniva is among a handful of companies offering products designed to address concerns such as the loss of confidential information, infection from viruses and legal liability issues raised by e-mail usage.

"This is an emerging space that nobody is quite dominating yet," said Mark Levitt, an analyst at IDC in Framingham, Mass. He noted that Omniva's rivals include Tumbleweed Communications Corp. in Redwood City, Calif., and Authentica Inc. in Waltham, Mass.

The secure e-mail capabilities promised by vendors such as Omniva address a growing problem, said Steve Bellis, vice president of IT at Paris-based Air Liquide's North American headquarters in Houston. The maker of industrial and medical gases is testing Omniva's software to see if messages and attachments can be set to expire after a specified time period to comply with Air Liquide's corporate data management policies.

"We looked at a few different products," Bellis said, "and at least from my standpoint, Omniva's approach is pretty elegant and easy to use." For instance, Omniva's technology integrates easily with Air Liquide's Microsoft Exchange messaging system and corporate directory, he said. And unlike other products that mainly allow companies to manage e-mails that are stored in a central location, the Omniva software allows companies to enforce confidentiality and data-retention policies wherever the e-mail resides, he added.

Air Liquide has about 2,500 users in the U.S., and the cost of rolling Omniva's technology across all of them would cost roughly $500,000, Bellis said. But a final purchase decision hasn't been made yet, he said.

Dawes said Omniva's software consists of a small client-side package and a policy management server. Prices start at $150 per user, plus $15,000 for the server. Omniva today will also release a version that will extend its functionality to wireless devices. ◗

Message Secured

Omniva's software is aimed at ensuring the following:

CONFIDENTIALITY: Messages that are marked "company confidential" or "do not forward" can't be read by anyone except the original recipients.

DISPOSAL: Messages and attachments can be set to expire. After a specified amount of time, all copies are deleted – wherever they're stored.

DATA PROTECTION: Users can block recipients' ability to copy, print, or cut and paste messages.

MARYFRAN JOHNSON

E-Mail Is Forever

REMEMBER THE DAYS when you used to worry about what was going into your "permanent record"? In grade school, that was the most deadly threat in the arsenal of irate schoolteachers. The offense might be as trivial as a string of tardies or as major as punching the principal. But once inscribed in your permanent record, it would follow you forever.

How many of us realize that corporate e-mail has effectively become our own self-created permanent record? And how many IT managers realize they're now in charge of it — forever?

Consider how much sensitive data is swarming around in your e-mail system today. Messages sent about employee performance, salary decisions, sales forecasts, customer complaints, price quotes, even merger and acquisition tactics. Not to mention trade secrets, product specs, customer bids or confidential customer agreements.

Any of the above could slip into the stream of outgoing e-mails from your employees, often with no one the wiser. "Companies spend millions of dollars on firewall protection, but they can't stop e-mail from leaving with confidential information in it," says Kumar Sreekanti, CEO of Omniva Policy Systems, a small startup offering tools to manage, track and secure e-mail (see story, page 19). I met with Sreekanti last week to talk about the dark side of e-mail leaks, which, as a manager, I know only too well. I've had confidential staff memos quoted back to me the next day by outsiders who certainly weren't on my "send to" list.

Events this past year — especially the unending barrage of security holes and virus infections — have ratcheted up IT awareness about the importance of protecting the corporate flanks from outside attack.

MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at **maryfran_johnson@ computerworld.com.**

But we tend to pay far more attention to e-mail security from a defensive posture, worrying about what's arriving in unsuspecting users' mailboxes rather than what's heading in the other direction.

With an estimated 60% to 70% of e-mail security breaches coming from inside corporations, the potential costs of this problem are significant. How do you calculate the damage from a disclosure of key competitive data or a breach of customer privacy? Who budgets for hefty fines from regulatory bodies, should your company fail to comply with new laws protecting data?

Two years ago, Walt Disney CEO Michael Eisner made news with his warnings about e-mail abuse — mainly the practice of blind-copying people — in a graduation speech at the University of Southern California. The most chilling example he gave (now a part of his permanent record, come to think of it) was about accidentally including an ABC News employee in the address line of an e-mail containing a preliminary earnings report. Disney owns ABC, and the employee helpfully returned his misfired e-mail. But if that information had been used for insider trading, Eisner's mistake could have caused quite a stink with the Securities and Exchange Commission.

The other security cloud on this horizon is instant messaging, which is even more insecure and less monitored than most e-mail systems. In just the past few months, a number of young companies have introduced products to track, archive and secure IM communications.

I know — the last thing IT needs right now is another line in the budget or another Chicken Little story for the CFO. But the scary scenarios around insecure e-mail and messaging are worth some thought as part of whatever security spending plans you're making for 2003.

The permanent record you save just might be your own. ◗

"YOU KNOW WE'RE IN TROUBLE WHEN EVEN THE SOFTWARE LAWS COME WITH PATCHES."

PIMM FOX

Provisioning Can Boost IT Operations

SUMMER ON THE West Coast means convertibles. While exhilarating, ragtops tend to be finicky. Alternatively, sunroofs are ubiquitous, and with the press of a button, drivers can enjoy the rush of fresh air.

The task of provisioning workers with IT resources appears much the same. Myriad systems require administrators to set up individual accounts with various levels of access, which takes lots of time, keeping sysadmins and workers from other duties, ruining productivity. That's why Webasto Information Systems, the IT systems supplier to Webasto GmbH (the world's leading supplier of car sunroofs), went for the one-button approach.

PIMM FOX is a freelance writer in San Francisco. Contact him at **pimmfox@pacbell.net.**

Josef Richter, CIO and managing director of Webasto Information Systems, has turned to e-provisioning to ensure that workers have reliable and correct access to IT resources.

With annual sales of more than $1 billion and 5,000 employees in Germany, France, Italy, Britain, the U.S., Japan and Korea, Webasto maintains a sprawling network and many applications. "We have SAP, Unix, Outlook, Exchange and Oracle," says Richter, "and each system requires different provisioning."

For example, the company's ERP system administration is separate from Oracle administration, posing a headache for the IT department. "If we don't know exactly what a person needs on their first day, they'll have no PC, no mailbox and no access to the right system," says Richter.

Richter chose software from Business Layers in New Jersey to automate provisioning and save time and money. Initially, he was skeptical that the

NEWSOPINION

software would handle the employee setups and changes, so he authorized a pilot using the SAP HR system as a test bed. "Within a short period of time, we were able to create hundreds of new employee mailboxes," says Richter.

Because the provisioning tool reduces system administration time, Richter eliminated one full-time position and expects to cut an additional one by year's end.

Without e-provisioning, workers at Webasto would often bemoan their first day on the job — and you might not get the right sunroof.

***

In my July 15 column, I incorrectly conveyed the impression that the accounting practices at EDS are under scrutiny or are questionable. They aren't. EDS is required to use percentage-of-completion accounting when it logs revenue and expenses from its outsourcing contracts. I questioned whether this and other generally accepted accounting principles — which EDS and other IT outsourcing firms must follow — are clear enough to give customers an understanding of the financial arrangements in outsourcing contracts. I regret the error. ◗

DAN GILLMOR

Escaping Microsoft's Hammerlock

THIS ISN'T the easiest time to be a software company, though it's not a bad time to be an IT buyer. Buyers can find some pretty good deals out there.

Except from one company — the monopoly that more and more IT folks, not just competitors, are learning to trust only so far.

The software industry's woes have continued to cascade in earnings announcements and other financial reports in recent months. Oracle, SAP and just about all the other big software vendors are hurting as customers cut back their spending.

There's one exception, of course. Microsoft's sales and profit machine just keeps on cranking. In the worst technology recession in memory, Microsoft is actually raising prices, and making the increases stick despite annoying many of its customers.

The latest licensing plan has been an eye-opener for longtime customers, and not a happy one. Microsoft, with its usual penchant for doublespeak, says the program is merely about simplification. Yet it looks more like a price increase to all but a few customers.

Trade publications, including *Computerworld*, have run stories peppered with acerbic criticism from Microsoft's customers. But annoyance is a pathetic counterweight to a monopolist's hammerlock.

IT, of course, has been Microsoft's Quisling-like collaborator in the software company's rise to dominance. Understandably, if shortsightedly, IT went with the best deal at the time. Now it's paying for having helped wipe out desktop competition.

The Windows and Office franchises spin off mind-boggling amounts of cash. Microsoft boasts gross profit margins way above 90%. It has almost $40 billion

DAN GILLMOR is technology columnist at the *San Jose Mercury News.* Contact him at dgillmor@sjmercury.com.

in the bank for moving into new markets and buying hard-pressed companies.

That dominance has been amplified by the Justice Department's disgraceful cave-in in the antitrust case, giving Microsoft a free hand to continue its unethical, bullying tactics. It's obvious to anyone paying attention that Microsoft now believes it can raise prices and squeeze customers, not just erstwhile competitors, with impunity.

About a year ago, on the weekend before July 4, I declared independence from Microsoft. This admittedly quixotic statement was not about totally severing links or denying the quality of some of the company's software — the Entourage e-mail client for my Macintosh is the best available. Rather, my independence is about supporting competition and sending a public message.

Since then other individuals have signed on. I wish more companies would take a similar pledge.

It's not easy to be free of Microsoft. Actually, it's more like impossible. But IT should be looking for ways to assert independence, now more than ever.

Running a Linux server here and there isn't enough. It's going to take more, starting with more servers running non-Microsoft operating systems. It will take a closer look at Linux on the desktop, and maybe even Macintosh. It'll take a switch to StarOffice, which is at least good enough for the vast majority of users' needs.

It will also take political smarts — keeping the heat on the federal government, for one thing, to force Microsoft's compliance with antitrust law. The Bush administration's pro-business slant worked for Microsoft. Maybe Microsoft's customers, choosing between paying higher and higher tributes to the monopoly and laying off workers, have something to say to the supposedly pro-business White House that can't be bothered to enforce the law.

When will IT escape its overdependence on Microsoft? When it starts to think long term. ◗

READERS' LETTERS

UCITA's 'Self-help' Wasn't Unique to Software World

SO THE UCITA folks finally dropped the hated "self-help" provision [QuickLink: 31992], whereby software publishers could remotely shut down software if the licensee was in violation of their license. Big cheers for the anti-UCITA forces.

What's odd to me is that self-help has existed for decades in other guises that nobody complains about. Fail to pay your phone bill and the phone company "self-helps" itself by remotely shutting off your service. Steal premium channels by hacking your cable connection and the cable company shuts your box down from miles away. Fail to make enough car payments and the bank sends someone to legally steal your car out of your driveway in the middle of the night. The bias against UCITA continues unabated, with little if any presentation of the fact that what it seeks (or sought, since I can't imagine it going any-

where) was to allow software publishers some of the same protections available to many other businesses.
Alex Torralbas
New York

Counting on StarOffice

I DON'T KNOW what product Russell Kay looked at, but my copy of StarOffice 6.0 (which I could not be happier with) clearly has a word-count feature [QuickLink: 31930]. It can be accessed by selecting the Properties item from the File menu.
Dan Anderson
Omaha

Hail to Project Managers

AS A PROJECT management professional, I was dismayed with your recent article "Taking Projects to the Extreme" [QuickLink: 31175]. While I am usually cheered to find articles espousing the value of effective project manage-

ment, I think it's wrong to suggest there isn't a recognition of project management as a discipline requiring specific subject matter expertise. Project managers bring special skills in the knowledge areas codified by the Project Management Institute: scope, schedule, quality, budget, risk, contractor, personnel, communications and integration. The fact that the project manager must rely on various subject matter experts to perform project tasks while the manager focuses on leadership, communication, stakeholder management and project integration is by no means a new concept.

Similarly, it's totally false that in traditional project management there's no accountability and that the team may "end up doing the task by default, expanding scope and increasing risk without any recognition that it's doing so." This is the very antithesis of project management, which promotes clear role definition and task assignment, as well

as active schedule control, change control and risk management. What you have described may be typical in poorly managed projects, but it is not the norm. Finally, all of the processes you have described as being "extreme" project management are standard processes that you will find in any good project management methodology.
Nancy Mulholland
Deputy director,
statewide initiatives
New York State Office
for Technology
Albany
nancy.mulholland@oft.state.ny.us

Meet Benjamin. Internet Dependent Independent Filmmaker.

And the inspiration behind cost-effective connectivity environments.

The competitive world of independent filmmaking isn't for the fainthearted. It's for strong-willed directors such as Benjamin, who seize opportunity with an iron grip. That's why he found a way to work with his production partners quickly and efficiently to get his films in the can and out to the world. With the help of the Nortel Networks™ Business Communications Manager (BCM), Benjamin implemented an integrated communications system that lets him adopt IP-based solutions at his own pace. It also means he and his highly mobile production partners have instant and secure access to everything from location photos to streaming video of his latest project.

#1 market share for Converged IP Solutions*

Plus, the consolidation of a communications structure with a single, easily managed system saves him 20% of the cost of buying and maintaining separate equipment. Which means he saves time and money so he can concentrate on producing the kinds of films that just may have him rehearsing an acceptance speech. It's just one more way Nortel Networks is making the Internet what you need it to be. To learn more, visit nortelnetworks.com/connectivity.

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WEB SITE MANAGEMENT

EDITOR'S NOTE

U NDERNEATH THAT snazzy home page, is your Web site's basement filling up with junk?

I ask only because I keep hearing reports of companies that have accumulated hundreds of different Web sites, each with thousands, even millions, of pages. Yikes! What a management nightmare. And they're run by 10 different content management packages, I bet.

The result is a lot of outdated information, dead links and unnecessary storage and support costs. Plus, there are more pages for your Web site visitors to get lost in, as well as stray pages that might be useful to competitors, hackers or even terrorists.

I'm definitely in the less-is-more camp. Here's my philosophy on Web sites:

■ Speed thrills. Provide fast-loading pages and a fast path from the front door to the shopping cart. People want to get in and get out.

■ Never let your visitors get lost.

■ Never let your visitors see dead links or typos, which sap your credibility.

■ Purge outdated or useless content — ruthlessly. Content has to earn its way onto your Web pages.

I know it's getting close to autumn already, but maybe your Web sites are overdue for some spring cleaning. It's time to shovel out the debris, consolidate, standardize and provide a cleaner Web experience.

One step might be to get control of your content management systems (page 30). Another might be to use application performance management tools to help you identify and solve performance problems (page 28). In this special report, we also provide tips on how to freshen up a Web site that's gone stale (page 38).

Now, when you finish cleaning up your basement, can you come over and clean up mine? ▶

Mitch Betts (mitch_betts@computerworld.com) is director of Computerworld's Knowledge Centers.

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Knowledge Centers provide practical information about specific IT topics. In addition to this monthly Special Report in print, there are numerous resources at our Web site, including research links, glossaries, white papers and the following online features:

■ **Building a Portal?** Heidi Collins, an IT manager at Air Products and Chemicals Inc. and author of the book *Corporate Portals*, discusses the success factors for corporate portals.

■ **Industry Q&A:** Michael Weider, Watchfire Corp.'s chairman and CTO, says IT needs a "dashboard" of critical data to manage Web operations.

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The Story So Far

How the Web crossed the Atlantic and became more than a plaything for European physicists. By Mitch Betts

THERE'S NO DOUBT that the accomplishments of Tim Berners-Lee and his colleagues at CERN, the European Laboratory for Particle Physics in Switzerland, were revolutionary. They created the four building blocks of the World Wide Web: HTML, the Web protocol HTTP, a Web server and a basic browser.

By Christmas 1990, Berners-Lee had set up a Next computer — an easy-to-program, Unix-based black cube that was the brainchild of Steve Jobs — as the world's first Web server.

But at the time, the Web didn't exactly look impressive. And it wasn't "World Wide" at all. In fact, it was more like a small intranet for CERN physicists. Information traveled no farther than a few buildings.

That changed after Stanford University physicist Paul Kunz got a peek at the future during a September 1991 visit to Berners-Lee's office in Geneva.

When Berners-Lee demonstrated information retrieval via the Internet between Next computers, Kunz wasn't impressed. But when he saw it was possible to send a query from the Next box to CERN's IBM mainframe and retrieve the results, Kunz started to get interested. Document retrieval from incompatible computer systems opened up many possibilities. But would it work between computers half a world apart?

"Tim couldn't demonstrate how well this is going to work because all the world's Web servers were at CERN," Kunz recalls. "It's not a very exciting demo."

So they used the Internet to remotely set up Kunz's computer at the Stanford Linear Accelerator Center (SLAC) with a browser and retrieved a Web page.

"We were both shocked at how well it worked," Kunz recalls.

Kunz and Berners-Lee then discussed putting something substantial — Stanford's meaty bibliographic database of 300,000 physics references — on the Web. Kunz returned to Stanford to do exactly that, with help from SLAC librarian Louise Addis.

On Dec. 12, 1991, the first Web server outside Europe went online at SLAC in Stanford, Calif. The next month, Berners-Lee demonstrated his Web application to more than 200 physicists at a conference in France. For his grand finale, he connected to the Stanford server and performed a search on the bibliographic database.

"People went home from this meeting telling their colleagues of a new way to access [the database]," Kunz says. "It was called the World Wide Web, and it was great."

The Stanford database is considered the Web's first "killer app" because it provided a compelling reason to use the new technology.

Web for the Masses

Though it was a hit with physicists, to reach a wider audience, the Web needed a browser for the masses. Many Web browsers were developed in academic or scientific settings, but the one that captured widespread attention was Mosaic, created by University of Illinois student Marc Andreessen. What made the Mosaic browser different is that it was a graphical user interface, instead of being text-based, and it worked on the ubiquitous Windows desktop.

Andreessen's team released Mosaic for Windows in October 1993. By the next year, thousands of people were downloading the free browser every day. The number of Web servers jumped markedly, and the Web took off. A page-and-a-half article about the Web and Mosaic that appeared in *The New York Times* didn't hurt, either.

Soon the Web took on a commercial flavor, as cybermalls opened and closed, Yahoo became the major directory of Web sites and Amazon.com Inc. started selling books and music CDs.

During the dot-com boom of the 1990s, some Web sites were slapped together quickly, and the biggest challenge for webmasters was keeping up with the spikes in traffic generated by their Super Bowl ads. Crashes and outages were headline news.

After the dot-com bust, the new goal was to apply time-honored IT disciplines, such as scalability, reliability and security, to make Web sites solid platforms for doing business.

But Web sites are growing increasingly complex, with multiple servers, load balancing, caching, firewalls, search engines and personalization — all geared toward improving the end user's experience.

And now, on with the story. . . . ▶

FAILED.COM ARCHIVES

The University of Maryland and Webmergers.com are creating an archive of business plans from failed dot-coms. The goal is to learn from the mistakes of the past.
⟐ www.businessplanarchive.org

L.A. CICERO/STANFORD UNIVERSITY

1987: Larry Wall creates the programming language Perl, which later is widely used for Web site applications.

1989: European physicists **Tim Berners-Lee** and Robert Cailliau propose the World Wide Web.

▲ **1991: Paul Kunz,** a physicist, installs the first Web server in the U.S., at Stanford University.

1994: Andreessen and colleagues leave NCSA to form Mosaic Communications Corp., which announces a Web browser called Netscape Navigator and a Web server called NetSite. The company later adopts the name Netscape Communications Corp.

2000: Hackers take down major Web sites with massive distributed denial-of-service attacks.

1980   **1990**   **2000**

1990: The Web protocols on Berners-Lee's Next computer undergo initial implementation.

1993: Marc Andreessen, a student at the University of Illinois' National Center for Supercomputer Applications (NCSA), develops Mosaic, the first Web browser with mass appeal.

1995: The open-source Apache Web server software is officially released to the public.

1995: Sun Microsystems Inc. debuts Java 1.0. ▶

JAVA

1996: The browser wars heat up as Microsoft Corp. releases Internet Explorer 3.0 and Netscape releases Navigator 3.0.

Turbochargi A Slow Site

Check out the tricks and tools that IT managers use to spot bottle-necks and speed up their sites.
By Mark Hall

T WAS A SYSTEMS manager's nightmare — an intermittent failure of a business-critical Web application. But instead of fixing the code, the staff just rebooted the server every night.

"It was swept under the rug, like so many problems that have temporary fixes that become permanent fixes," says Eric Jones, senior network engineer at Greensboro, N.C.-based VF Corp., the world's largest apparel maker.

But Jones should consider himself lucky. A May study by the Business Internet Group of San Francisco revealed that 205 of 315 sites studied suffered application failures that weren't visible to IT operations. This research underscores the critical problem that stumbling applications — not inadequate bandwidth, pokey processors or even inept users — are crippling performance on Web sites today.

Slow Web software can add up to lost sales for e-commerce vendors and higher costs if performance problems result in missed thresholds in service-level agreements. Here's a look at some tools

RICHARD DOWNS

ing

that a few IT managers have found effective in identifying and fixing application performance problems.

Problem: Web software was certainly the culprit at VF. The errant server ran an in-house Web application with poorly written Dynamic Link Libraries (DLL) that caused a memory leak. But the DLL failure didn't happen every time: VF's business-to-business partners for its Wrangler- and Lee-brand clothing sites would log in and sometimes get an error page, sometimes not. But because the DLL problem didn't shut down the Microsoft Internet Information Server (IIS), no alert was sent to IT.
Fix: Jones says that by using real-time code-analysis software — AppSite from Identify Software Inc. in Raleigh, N.C. — he was able to locate the troublesome DLL, which was ultimately rewritten in its entirety. But that fix took nearly a year to get through in-house decision-making. In the meantime, an IT staffer had to reboot the IIS server every night. "That was the worst-case solution," he says.

Problem: When a Web site bogs down, users initially blame the network, says Jim Demos, vice president for global network services at Reader's Digest Association Inc. in Pleasantville, N.Y. But they're usually wrong, he says.

In one instance at Reader's Digest, a Java application that linked a Web server to a back-end database was causing a Web slowdown.

The application wasn't releasing the connection between the servers. Because the database server required a set number of connections, once that number was reached, the next link failed to connect and subsequent users sat waiting.
Fix: The magazine publisher invested in SuperAgent, a monitoring package from NetQoS Inc. in Austin, Texas, which uncovered the problem with the Java application.

Detecting the source of a slowdown takes some investigative work. Demos notes that site performance is more variable than, say, mainframes and client/server response rates, where subsecond returns are the norm. "But users have had to become a lot more patient in a Web environment," Demos says. That's because the complex interdependencies in Web applications provide many opportunities for software to slow down operations.

Problem: Java was at the center of a similar headache for Jim Struve, assistant manager of information support services at WEA Trust, a Madison, Wis.-based insurance and retirement services enterprise for the state's public school employees. He says a Java applet couldn't release the connection to a DB2 database on its Web site.
Fix: Struve used a performance-monitoring tool called Fenway, from Dirig Software Inc. in Nashua, N.H. With it, he discovered that the Java software wasn't the culprit. Rather, the DB2 application was responsible for not releasing the connection to the Java program.

The Trouble With Fixes

These IT users found products on the market to help ferret out which applications were causing their performance problems. But while there are a lot of products to choose from, they come with their own sets of problems.

For one, these products aren't meant for novice systems administrators. "I have one caveat," says Jones, referring to Identify's AppSite product. "It needs experts to use it, experts who know Windows workings inside and out."

Another issue is that the monitoring software itself chews up processing cycles on the servers. Mark Rogers, Identify's vice president for product management, acknowledges that AppSite 4.0 can command 3% to 5% of a system's capabilities. Jones says this isn't a problem at VF, but he advises others to be aware of the impact a monitoring tool could have on existing hardware before deploying it.

At VF, AppSite feeds alerts into the Tivoli network management framework, which in turn fires off trouble tickets to the help desk. But while that works at VF, it isn't sufficient as a long-term solution, says Jean-Pierre Garbani, an analyst at Giga Information Group Inc. in Cambridge, Mass. "With the Web infrastructure going mainstream, point tools need to better integrate into managed frameworks," he says.

A View From the Top

Some IT managers continue to use just the management consoles of the monitoring tools, because they offer targeted information on areas of concern.

Tom Ballard, chief technology officer at Austin-based Hoovers Inc., a business information provider, uses the "executive dashboard" from ProactiveNet Inc. in Santa Clara, Calif. The software gives him the right amount of high-level information he needs to see if problems exist and then lets him drill down for details. "That way, I can see if the problem is being fixed," he says.

Harry Nicholos, assistant director for Unix and Web services at North Carolina State University in Raleigh, is content to use the console from Sunnyvale, Calif.-based Resonate Inc. "We haven't even considered connecting it to OpenView," which the university uses to oversee its IT operations.

Although imperfect, there are tools that will track down the root causes of a Web bottleneck. And by keeping your Web site running at a nice clip, they can save your company money. ▶

A HEALTHY WEB SITE
WellMed uses OneSight monitoring software from Empirix to keep an eye on the vital signs of its Web site.
QuickLink: 31890

Root-cause analysis of Web application failures remains outside the purview of managed frameworks. But that's starting to change.

QuickLink: 31455
www.computerworld.com

Find Those Bottlenecks

A WEB SITE REDESIGN is an ideal opportunity to streamline the performance of your application set and boost your hardware's capabilities. It's also a good time to look under other rocks for problems that may be weighing down your site.

At **American Airlines Inc.** in Fort Worth, Texas, a recent Web site overhaul included new servers and increased network capacity in the data center. Scott Hayden, managing director for interactive marketing at AA.com, says it also meant new standards for Web designers on such things as the sizes of GIF image files and the breadth of color choices to minimize performance slowdowns.

WEB SITE REDESIGN

And despite stress-testing the new site with tools from Empirix Inc. in Waltham, Mass., before it went live in the spring, Hayden says the company rolled out the site incrementally – to 50,000 of its best customers at a time – during the ramp-up to the site's formal launch.

"That way, we could see real-world loads and ease the internal team into the new site," he says.

During the ramp-up, Hayden's developers could see how people navigated through the site and how applications performed. But because most users were still using the old site, the team wasn't "hanging on the edge of the limb," Hayden says. It gave the developers a chance to fix a few minor problems before the full-scale rollout.

The result? AA.com Web pages now average load times of 1.7 seconds, down from 5 seconds.

Phong Lam, chief technology officer at **Reliaquote Inc.** in Falls Church, Va., brought his Web site's page-loading performance down to 7 seconds from a previous average of 12 after a redesign. Like AA.com, Reliaquote, an online life insurance broker, adopted standards for GIFs and color usage and included more Cascading Style Sheets to boost the Web site's performance.

Equally important, it changed its service provider. The old one used to drop packets once the Web site had reached the saturation point on its leased T1 line. The new hosting site adds network capacity for Reliaquote on demand during traffic spikes.

– Mark Hall

Content Tools To Fit the Task

Content Management Software

FIELD REPORT

By 2004, 95% of Global 2,000 firms will roll out some sort of content management tool, according to a May 2002 study by Stamford, Conn.-based Meta Group Inc. Companies are looking to use the tools to exploit new and entrenched Web site technologies that enable e-commerce, document and file management, and the distribution of audio and visual content.

IT managers must decide whether they want to buy from a content management suite vendor or pick best-of-breed products. Their buying and implementation decisions will reflect their consideration of security, the indexing or cataloging of the content, and how the content is distributed.

By Marc L. Songini

Content Management For Shifting Needs

TECH CHECK

While content management tools for Web sites offer companies the promise of cutting costs while centralizing the storage and distribution of documents and media, there are a number of thorny problems to be solved, such as coping with different types of media and addressing security and access issues, say users and analysts.

In particular, users are finding that wireless, portal, XML, Web services and rich-content technologies are changing the rules of the game. Different types of sites, whether those for providing information to the general public or internal portals for salespeople, call for different technical emphases.

For instance, at Los Angeles-based E Online Inc., a wholly owned subsidiary of E Networks, the key was flexibility, according to Jeff Mayzurk, vice president of technology. The E Online site, which gets about 7.2 million unique hits per month, had to be able to deliver large amounts of content to a variety of Web-enabled devices — with a minimal number of support staffers. To achieve this, E Networks turned to Vignette Corp. in Austin, Texas, for its Vignette Content Management Server software.

The application allowed E Online to break down the various types of content, including HTML, audio, video and Windows Real Media, into small components that can often be reused, getting sent out with the appropriate changes to the end devices. For instance, an online story with a JPEG image would have the image removed so the text could be downloaded to handheld devices.

"The delivery mechanism changes, but the content needs to be viable over a long period of time, and you can't afford to reauthor it," explains Mayzurk. Additionally, the Web site relies on the Vignette Lifecycle Personalization Server, which tracks online viewer behavior, to serve up the content that's of most interest based on a viewer's tastes and buying patterns.

Similarly, at the the Musée du Louvre in Paris, staff wanted to be able to allow cell phone and handheld devices, as well as regular browser-enabled PCs, to access its portal. The software platform had to support both Java 2 Enterprise Edition and XML standards to increase the possible number of viewers, according to Catherine Jaques, who's responsible for Internet projects at the museum.

To that end, the Louvre is rolling out applications from San Mateo, Calif.-based customer relationship management and content management software maker Blue Martini Inc. as part of a multiyear, $5.8 million-plus project to make the museum's assets available to the public. The Louvre's goal is to offer content, information and services, including newsletters, educational information, virtual tours, exhibit previews, search capability and interactive calendars to Web visitors. The site — which must support multiple languages — will allow the public to view 130,000 drawings and 35,000 pieces of art.

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Keebler is currently using Proscape's Encyclopedia application, which offers a directory of data to help locate and serve up content for the sales reps — including video and other media-rich files, spreadsheets, reference documents, third-party information and Web links.

Next, Keebler will be working on an upgrade to Version 4.4 of Proscape's marketing- and sales-effectiveness product that will enable the company to offer extended off-line capabilities, enhanced system reporting and a PowerPoint repository.

Keebler had been concerned that competitors might access the portal, but those fears have been allayed, says Kososki. "The benefit of Proscape's system is that it operates on a server completely behind Keebler's firewall, yet it has the capability of hosting sites that can be accessed by our retailer partners," he says. ▶

KNOW YOUR VENDOR

Find out why it's smart to look into your content management vendor's finances as well as its products. And look for a list of online resources:

QuickLink: 32023
www.computerworld.com

E Online's Web Content Management System

When a user logs into eonline.com, the LPS pulls his registration profile and previous activity information from the visitor database and then communicates that to the Vignette CMS by way of the application server to locate and deliver personalized content for that user. The observation management server also monitors current user behavior and continuously modifies content delivery based on that activity. Commercial subscribers to syndicated content connect directly through the E Online firewall to a special syndication server that automatically pushes out relevant content.

10 Tips for CM Success

1. Before you buy anything, establish your business and content management (CM) goals and determine the type of Web site you need to create.

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Content syndication server

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Vignette Content management server (CMS)

Sybase content database

Visitor database

Observation management server (OMS)

Need for Speed Drives CM Decision

Q&A

Colette Askeland is group director of IT at San Jose-based Cadence Design Systems Inc., a provider of electronic design products and services. The company relies on software from Sunnyvale, Calif.-based content management software maker Interwoven Inc. to help it operate two customer support Web sites and four corporate sites. Each site uses Interwoven's TeamSite product for content storage, workflow and versioning, and its OpenDeploy for deployment from the development environment to production.

Askeland answered some questions from *Computerworld* about what goes into procuring content management tools.

What made you decide on these particular tools?
First, we set out primarily looking for a solution that would give key content providers the ability to manage their own content and publish information quickly. TeamSite provided us with the functionality we needed, with an easy-to-use interface.

The second problem was to automate the manual processing of applying metadata to the content. We needed the ability to apply and change product metadata quickly on large volumes of content. Since implementing TeamSite, we have reduced turnaround for publishing content from a couple of weeks to 24 hours. We now have a centralized store available for managing all of our enterprise content.

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What the Major Players Have to Offer

PRODUCTS Web content management is no longer focused on the creation of passive Web sites presenting text documents. The emphasis is shifting to much more complex portal-based sites that offer a wide variety of technologies, including audio and video files. Enterprise content management products usually include document management plus digital asset management and shared-file tools. Here are some of the key players.

Content Management
STELLENT INC.: Stellent Content Server offers end-to-end content management; Stellent Content Publisher provides advanced template-based technology to automatically publish standard business documents or content; and Collaboration Server allows secure, ad hoc project teams to work online without IT assistance.
VIGNETTE CORP.: Vignette V6 Content Suite offers an integrated collection of content management applications, including personalization and analysis tools. Vignette V6 Multisite Content Manager provides a collection of open-standards-based tools and applications for multisite and portal creation and management.
DOCUMENTUM INC.: Documentum 4i ECM Platform offers enterprisewide content management that allows organizations to create, manage, personalize and deliver trusted content globally. Documentum's products cover document management, Web content management and digital asset management.
INTERWOVEN INC.: The Interwoven 5 platform, with its TeamSite flagship product, offers content processing, collaboration, management, intelligence, production and distribution.
BROADVISION INC.: BroadVision offers One-To-One Content, which integrates with the company's One-To-One Enterprise suite to deliver highly personalized content within BroadVision enterprise business portal implementations for large-scale deployments.

Enterprise Content Management
FILENET CORP.: FileNet has been evolving from its traditional strength in document-based business process management. FileNet Web Content Management claims to provide out-of-the-box online functionality, and it also includes tools for portal integration with most industry vendors' systems.
MICROSOFT CORP.: Content Management Server enables companies to quickly and efficiently build, deploy and maintain Web sites. The product will deliver dynamic content for multiple audiences and devices and includes personalization capabilities.

Repository
IBM: Content Manager is a version of the DB2 database that's optimized to handle large amounts of unstructured data, including documents, images, audio and video.

Content Tools To Fit the Task

Content Management For Shifting Needs

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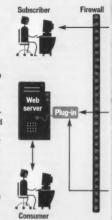
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PRODUCTS Web content management is no longer focused on the creation of passive Web sites presenting text documents. The emphasis is shifting to much more complex portal-based sites that offer a wide variety of technologies, including audio and video files. Enterprise content management products usually include document management plus digital asset management and shared-file tools. Here are some of the key players.

Content Management

STELLENT INC.: Stellent Content Server offers end-to-end content management; Stellent Content Publisher provides advanced template-based technology to automatically publish standard business documents or content; and Collaboration Server allows secure, ad hoc project teams to work online without IT assistance.

VIGNETTE CORP.: Vignette V6 Content Suite offers an integrated collection of content management applications, including personalization and analysis tools. Vignette V6 Multisite Content Manager provides a collection of open-standards-based tools and applications for multisite and portal creation and management.

DOCUMENTUM INC.: Documentum 4i ECM Platform offers enterprisewide content management that allows organizations to create, manage, personalize and deliver trusted content globally. Documentum's products cover document man-

agement, Web content management and digital asset management.

INTERWOVEN INC.: The Interwoven 5 platform, with its Team-Site flagship product, offers content processing, collaboration, management, intelligence, production and distribution.

BROADVISION INC.: BroadVision offers One-To-One Content, which integrates with the company's One-To-One Enterprise suite to deliver highly personalized content within BroadVision enterprise business portal implementations for large-scale deployments.

Enterprise Content Management

FILENET CORP.: FileNet has been evolving from its traditional strength in document-based business process management. FileNet Web Content Management claims to provide out-of-the-box online functionality, and it also includes tools for portal integration with most industry vendors' systems.

MICROSOFT CORP.: Content Management Server enables companies to quickly and efficiently build, deploy and maintain Web sites. The product will deliver dynamic content for multiple audiences and devices and includes personalization capabilities.

Repository

IBM: Content Manager is a version of the DB2 database that's optimized to handle large amounts of unstructured data, including documents, images, audio and video.

Best Foot Forward

Shoemaker cuts Web site costs with product-image catalog system. By Melissa Solomon

SNEAKER TIME: the number of hours employees are paid to run around looking for photos. That's the phrase Cole Haan's e-commerce managers coined after the Yarmouth, Maine-based shoe and apparel maker launched its Web site in December 1999.

Prelaunch, Cole Haan's product images were shot on film, so hundreds of photos had to be scanned. The Web team eventually switched to digital photos, but that still posed a problem: With 600 to 800 new product images posted to the site each season, locating the CDs that stored the right photos became a major hassle, explains Buzz Morley, e-commerce project manager at Cole Haan.

"You put on your sneakers and run all over the building to find that image," he says. "I was paying somebody $35 bucks an hour to run up and down the stairs."

Then Bruce Damon, director of brand marketing, told Morley about digital asset management software, which stores, manages and sorts digital images. After researching it, Morley was sold. Since installing the system in January, he has happily seen the phrase *sneaker time* fade from the company's lexicon.

Better yet, Cole Haan has been able to cut staffing costs and the time it takes to get products to market, says Morley. Before installing the software from Atlanta-based MediaBin Inc., Morley paid a contractor $1,700 per week to scan, retouch and repurpose product images. The contractor spent 90 to 120 days each season getting the photos ready for the Web site. Now, through automation, a staff member can perform the same tasks in 11 minutes, says Morley.

"I get a lot of accolades for it, but I really didn't do all that much," he says. "I wish all my projects were that easy."

Morley has shown the digital asset management system to members of Shop.org, an online retailer association he belongs to, and they've all been fascinated with it, he says.

Such systems are already popular in entertainment and advertising because of the vast quantities of digital photos and video those industries use. Since most corporations don't deal with such volumes of digital content, the cost savings aren't always clear, and the technology is seen as a luxury by many, says Connie Moore, a vice president at Giga Information Group Inc. in Cambridge, Mass. But she predicts that will change in the next 12 to 18 months.

Last year, Documentum Inc., a document management vendor in Pleasanton, Calif., acquired Bulldog Group, a Toronto-based digital asset management firm. Moore predicts that there will be more mergers and acquisitions in these fields, which will expand the customer base, boost the visibility of the products and, in turn, lower costs. And as Web sites become more sophisticated, enterprise content management is likely to catch on, she says.

Keeping It Simple

Morley didn't have to sell Cole Haan's senior managers on the Media-Bin system — he found a back door to sneak it through.

When he first pitched the system in the first quarter of 2000, it cost $80,000 for the hardware and a handful of software licenses for staff in Yarmouth and in Cole Haan's New York design office. That was a no-go.

When the company was upgrading its storage network the following year, Morley repurposed two old servers for the digital asset management project. That cut the project cost almost in half, he says, which brought it under the $60,000 threshold required for executive approval.

Morley bought the MediaBin software in January. The system itself consists of three pieces: a SQL 7 database (single-box license), a Web server and the MediaBin software, which acts as an intermediary between the database and the user interface or Web front end. The system can be coded with Java or Microsoft Corp.'s Visual Basic.

Training consisted of two days: The first was for basic end-user training, and the second was spent with a Media-Bin Photoshop expert, who taught Cole Haan's QuarkXPress electronic publishing software gurus exactly how the system works and what's going on in the background.

The system went live on Jan. 27. Morley says he won't have hard return-on-investment figures until the end of the fiscal year, but he suspects the returns will far exceed the $40,000 investment. The company's Web site is profitable, and one-third of sales come from customers in areas that have few or no Cole Haan retail stores, so getting products on the Web quicker can directly contribute to the company's bottom line, he says.

"I've been very impressed," Morley says. "It was a big win for me." ◗

Solomon is a freelance writer in New York. She can be reached at melissasolomon7@hotmail.com.

Cole Haan

LOCATION: Headquarters in Yarmouth, Maine. Design offices and showroom in New York.

BUSINESS: Designs and markets fine footwear for men and women, as well as accessories, handbags, belts, hosiery and small leather goods.

STATUS: Subsidiary of Nike Inc., Beaverton, Ore.

⟳ www.colehaan.com

❝ **You put on your sneakers and run all over the building to find that image. I was paying somebody $35 bucks an hour to run up and down the stairs.**

BUZZ MORLEY (LEFT), E-COMMERCE PROJECT MANAGER, COLE HAAN

WEBB CHAPPELL

As companies' e-commerce capabilities multiply, outsourcers are being called on to help kick up the horsepower and harness the growth. By Jaikumar Vijayan

Gone are the days when companies relied on managed service providers to host static, single-server sites. With Web sites becoming more sophisticated, companies are now asking their outsourcers to monitor and manage a slew of complex, real-time transaction-processing activities running across multiple sites and servers. And with financial turmoil in the Web outsourcing market, these customers want to know more about their vendors' financial records, business models, operational strategies and future plans.

In fact, concern over vendor viability is causing many users to buy outright the equipment supporting their Web operations or to pull their managed Web equipment back in-house, says Andrew Schroepfer, an analyst at Tier One Research Inc. in Plymouth, Minn.

"[Users are] looking for more than just someone with a good data center and nice connectivity," he says. "They are looking for someone who can help them cost-effectively manage and monitor their Web applications."

Here's what some companies are doing to get the most from their relationships with Web outsourcers.

Cranked-up Horsepower

When GolfServ.com, a Web site owned by Chicago-based SirenServ Inc., was launched in 1999, the site attracted a few thousand visitors every month. It easily ran on two small Web servers hosted by an external service provider.

Today the site is one of the premier online destinations for golf fans, attracting hundreds of thousands of customers every month. Its content is licensed to companies such as AOL Time Warner Inc., CNN/Sports Illustrated and The New York Times Co., and visitors to the site can do everything from catch up on the latest golfing news to track their own handicaps.

Along the way, the task of managing the site has become a lot more complex for Englewood, Colo.-based Verio Inc., GolfServ's managed services provider.

"The nature of the applications that are being hosted has changed," says Michael Caspar, chief technology officer at GolfServ.com. "It takes a lot more horsepower to host some of today's dynamic Web applications compared to before."

For one thing, the GolfServ.com site now runs on seven large Web servers that have to be mirrored and fully load-balanced for high availability. The networks have to be fully redundant for the same reason. Verio provides round-the-clock firewall and intrusion monitoring services and is contractually obligated to guarantee over 99.99% network uptime.

"We're in the major leagues these days, so we need near-100% uptime,"

Getting Help fo

Tips for Choosing a Web Outsourcer

To capitalize on shifts in the Web outsourcer market, here's what businesses should look for when choosing a partner:

■ **Expanded service-level agreements.** As companies outsource increasingly complex Web environments, oversight and control become crucial. More and more customers are asking for service-level agreements that cover not just the networks and hardware infrastructure, but the operating and application environments as well, says Steve Kirchoff, an executive vice president at hosting vendor NaviSite.

■ **Extra options.** Expect hosting providers to offer an even more diverse range of options, such as wireless services, virtual private network connectivity, backup, business continuity and disaster recovery capabilities, analysts say. When vendors don't have the capabilities, they will acquire them through partnerships. For example, Verio says it hopes to deliver most of its new capabilities by partnering with other vendors.

■ **Personalized service.** Look for more customized service offerings delivered both on-site and at hosting locations. The services are designed and engineered for very specific e-business requirements involving high-volume-traffic sites using nonstandard equipment.

■ **Vendor stability.** Expect more consolidation and financial turmoil before things settle down, says Andrew Schroepfer, an analyst at Tier One Research. A lot of companies in the managed services business built out huge data center infrastructures in anticipation of demand that has never materialized.

"A lot of companies that leased hardware ended up going out of business, and the hosting companies were left holding the bag," says Mark Kramer, manager of e-business applications at XM Satellite. So make sure your vendor is "doing what it takes" to stay in business, he says.

– *Jaikumar Vijayan*

and maintained its own equipment; the other was a shared services arrangement where Monster's Web site shared servers that were being used by other customers.

With Rackspace, Monster pays a monthly fee that includes the cost of renting equipment as well as round-the-clock network services and support. Because Rackspace's infrastructure is built up using proven, prepackaged components, deployment times are reduced and technical challenges are easier to manage, says Nick Matina, director of infrastructure operations.

As a result, the return on investment has been "the speed at which we can grow, and the release from the liability and overhead that comes from maintaining your own hardware and software," Matina says.

Weighing the Risk

Companies are also being careful about which outsourcing vendor they choose. When XM Satellite Radio Inc. in Washington recently renewed its contract with hosting vendor NaviSite Inc. in Andover, Mass., the station made sure it first carefully scrutinized the vendor's financial condition and its business plans.

"We wanted to make sure that NaviSite was doing what it takes strategically to remain in business," says Mark Kramer, XM Satellite's manager of e-business applications.

The station, whose partners include cable TV channels MTV, VH-1 and ESPN, has more than 100 music and talk channels and will soon offer a digital audio subscription service to owners of cars from several companies, including General Motors Corp., Volkswagen AG and Audi AG. NaviSite hosts XM's Web site in a clustered high-availability configuration, and its services include application backup and restore.

Even after satisfying itself that NaviSite was stable enough for its purposes, XM Radio is taking no chances and is fully prepared to bring its Web operations back in-house quickly if needed.

"It would obviously add more work for everybody, but we have the environment set up here that would allow us to bring it back," Kramer says.

Meanwhile, the near-desperate quest to find higher margins is pushing hosting companies — most of which are reeling from the current economic slowdown — to offer a broader portfolio of services. This has created more of an emphasis on value-added infrastructure management and layered services around monitoring, high availability, business continuity, scalability and service assurance.

Having a broader services capability gives hosting companies opportunities for higher margins, particularly during tough economic times, says Craig Schlagbaum, vice president of channel sales at Verio.

Verio, which is owned by telecommunications giant NTT Communications in Japan, is moving rapidly away from a pure co-location business model to more managed-services offerings such as application backup and recovery, firewall and intrusion monitoring, and managing applications at customer locations.

"Our customers are looking for more one-stop-shopping capabilities from their providers," Schlagbaum says.

"Providing uptime and high-bandwidth connectivity is easy and has become a commodity game these days," says Lew Moorman, vice president of business development at Rackspace. The value-add comes from "the expertise and responsiveness, particularly around core server and operating system environments, applications and Web server security," he says. ▶

A GRACIOUS (WEB) HOST

Check out the Web Hosting Resources site for a compilation of information on hosting services:
🔾 **www.web-hosting-resources.net/ isp_resources.html**

This site will help you find a host that meets key criteria:
🔾 **www.comparewebhosts.com**

ASPnews.com offers a list of Web hosting providers:
🔾 **linksmanager.com/aspnews/links27_4.html**

Caspar says. "We sat down with Verio a couple of months ago and told them about our new requirements and what we needed from them."

Off-loading the Liability

Monster Commerce Inc. in Calabasas, Calif., is another company that expects its service provider to do more than just host its Web operations. Monster builds and runs e-commerce-enabled Web sites for small to midsize companies and uses Rackspace Inc. in San Antonio to host more than 1,500 such sites. All of the Web sites are hosted on equipment that's owned, operated, supported and maintained by Rackspace.

The deal Monster has with Rackspace is different from two previous hosting contracts, one of which was a co-location deal where Monster owned

r Big Web Sites

Web Caching

DEFINITION

Web caching is the practice of storing frequently requested — but infrequently changed — pages, images and other Web objects on a nearby server or even a user's PC.

BY RUSSELL KAY

NFORMATION from computers all over the world is available on the World Wide Web. But what happens when a server — or even an entire network — gets too many requests? Performance takes a major hit on that network.

To avoid this, one could buy more servers. But a more efficient way to increase server capacity — especially if the information is relatively static — is to store (or *cache*) copies of the data on servers in different locations around the Web. Then, when a request comes in for a particular Web page, it can be redirected to a server that's closer to the requester, so the final delivery of the page doesn't have to travel

QUICK STUDY

through so many different segments of the Web.

That's one type of Web cache in which the host is responsible for the caching, even if it is outsourced to a third party such as Cambridge, Mass.-based Akamai Technologies Inc. or Foster City, Calif.-based Inktomi Corp.

Why Caching Matters

In the early days of the Web, when network traffic was much lower, caching wasn't as important. But with hundreds of millions of new computers coming onstream every year and most of them using the Web, caching helps improve quality of service for everyone, provides protection against network surges and reduces overall network traffic.

Sometimes, the Internet service provider is responsible for Web caching. This type of caching could be useful in situations where the same file is requested many times. A good example is a logo that appears on all of a company's Web pages: Each time a user clicks on one of that company's pages, that same logo graphic is called for.

Let's say the company is Google Inc. All of the people at all of the networks that hook into the same Internet service provider could request the Google logo thousands of times a day. Relying on Google to have remote cached sites may be helpful in keeping traffic manageable on Google's network, but it does nothing for the Internet service provider. The provider's servers have to handle all those requests, and caching can come to the rescue. The provider keeps track of what pages and files are being requested and stores local copies of those asked for frequently. When I click on Google.com, the logo comes not from a Google server in Mountain View, Calif., nor from one of Google's outlying cache servers. Instead, my Internet service provider just

sends me what it has stored.

Extend this one step further, and it's likely that one of a corporate network's own servers is caching the Google logo. These types of caches are called proxy caches.

Because proxy caches serve a large number of users, they're quite effective at reducing latency and traffic. That's because popular objects are requested only once, and served to a large number of clients.

Finally, each individual Internet browser does a certain amount of caching right on the end user's workstation.

The effect of all this caching is to speed up access. A page loads faster if you go back to it within a short period of time because your PC already has a copy of it tucked away and can deliver it lickety-split.

How does it work? A user in, say, London requests a page from a site whose server is in Tokyo. That request may have to travel through a chain of dozens of network routers, and the overall speed of that request (and its response) depends on the slowest link in the chain. If one of those intermediate routers is overloaded, it starts dropping packets and asking for them to be retransmitted. This slows down that piece of traffic even more.

If a cached copy is closer to the browser, the requested content has to pass through fewer routers, reducing the potential for delays and speeding up service. Caches that minimize the distance that data must travel also reduce transmission costs.

Time Out

But what about changes? Most of the files and Web pages stored in a cache don't stay the same over time. Thus every time it gets a request, the cache has to check to determine if its copy of the requested page is "fresh" (meaning it hasn't reached its expiration date). If it's fresh, the cache server can then serve it directly. Only if the object is out of date does the server need to request a new copy from the originating server.

Not every Web object can or should be cached. The best candidates are the most requested, largest objects (especially images) that aren't likely to change very often — that is, object with what's called a long "freshness" time.

An object's headers can be coded in such a way that cache servers won't cache them. Also, authenticated or secure objects can't be cached, and neither can script results. ▶

Kay is a freelance writer in Framingham, Mass. Contact him at russkay@charter.net.

CACHE OF INFORMATION
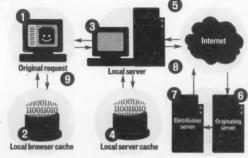
For useful online links and other resources, visit *Computerworld* online.

QuickLink: 31898
www.computerworld.com

Are there technologies or issues you'd like to learn about in QuickStudy? Send your ideas to quickstudy@computerworld.com

How It Works

1. User requests Web page.
2. Browser checks cache; if in, request is served; no more traffic needed.
3. Not in browser; ask local server.
4. Server checks cache; if in, serves.
5. Not in server cache; request from Internet.
6. Originating server checks location of request; refers request to the closest distribution server.
7. Distribution server delivers request . . .
8. To local server, which sends it to . . .
9. Original requesting user; browser now caches object.

Original request
Local server
Internet
Local browser cache
Local server cache
Distribution server
Originating server

HOW DOES E*TRADE FINANCIAL PLAY TO WIN?

intel inside
XEON

IBM.

@server

Improving your Web site doesn't always require a big, expensive redesign. A series of small, low-cost steps can produce immediate benefits. By Mathew Schwartz

THE PHRASE *Web site makeover* often implies a dramatic, brand-new look for a Web site. But take a tip from leading companies: Redesign is an ongoing journey, not a final destination. The big sites are always freshening up their design features, and whether the project is big or small, there are some universal rules to follow.

First, start by asking these three questions: Will the change benefit customers? Will it produce revenue? Will it reduce costs? "That's where having the biggest bang for the buck is — having that conversation," says Jared Spool, founding principal of User Interface Engineering in Bradford, Mass. "The next-biggest bang for the buck is figuring out how to measure that."

Freshening up a stale Web site is a process of identifying what would make the site more useful, evalu-ating the result and then trying again. The following are some tips from the experts:

TIP 1: Choose Compelling Artwork

Ditching stock art and choosing more appropriate images is a sure way to enliven a site. "You can put human faces on your site, but it's so much more impressive if you have real employees, real customers," says Marie Tahir, director of user experience at Intuit Inc. in Mountain View, Calif.

St. Louis-based A.G. Edwards & Sons Inc., for example, dramatically sharpened the look of its client home page by enabling its financial consultants to upload pictures of themselves, creating a more personalized experience (see screenshot, next page).

For transactional sites, show what's for sale. "If you have a real product to sell, show the product," says Tahir. "It makes people feel good and grounded and in the right place when they see the product they're looking for."

Keeping images appropriate usually means keeping them simple. Seattle-based Amazon.com Inc. is a good example: Its book section shows images of books, not people reading books.

TIP 2: Make the Writing Easy to Read

Want to quickly freshen up a site? Start with the writing. It's a surefire way to improve usability, which in itself is a great goal.

"Rather than just putting more lipstick on the pig, I always urge people doing redesigns to invest in really good writing and editing skills," says Tahir. "People think design, and they separate it from content."

Boston-based Fidelity Investments has a "jargon clip" on video that it uses for training, says Eleri Dixon, vice president for usability at Fidelity E-Business. In it, a real customer is asked whether she understands the words on the site. Dixon says the customer replies, "Well, if you use all buzzwords, I understand what you're saying, but they're not my words." Customers' words are now used whenever possible, she says.

At A.G. Edwards, wording on the navigation bar

Persona Grata

NEED GUIDANCE WHEN FRESHENING YOUR SITE? Meet Val Mason, a divorced woman in her forties with two children, who works full time and values her free time. But Val isn't real – she's a persona made up of bits of real users that Discover Card, part of Discover Bank, uses to stand in for its 9.8 million registered, card-carrying Web site users.

"User-experience design is really about what the customer thinks it should look like," says Colleen Zambole, vice president of electronic commerce at Discover Card in Riverwood, Ill. By using personas, Discover Card can make changes that address customer needs, she says. In addition, personas give project team members a common language for discussing customer-centered design.

Personas aren't just built out of thin air; they're amalgamations of all available data, including surveys and focus groups. Watching users is also crucial. "What people say and [what they] do is really different," says Colin Hynes, director of usability at Staples Inc. in Framingham, Mass.

– Mathew Schwartz

was made more intuitive, and the client home page was reorganized to suit the needs of visitors, says Betsy Lueg, site manager.

TIP 3: Simplify and Consolidate Information

Another way to quickly freshen up a site, especially a corporate site, is to consolidate. "Group all the company information in one place, rather than scattering it," says Tahir. "People's minds try to group things, and if they don't see it in the place where they think it should be, then they'll think it's not there."

The natural tendency when freshening a site is to give users more — more features, more options. Yet too many entry points can make a site look stale and may suggest that its designers added features without rethinking the old. A case in point: By simplifying an interface and making it more visually compelling,

Time for a Makeover!

Priceline.com Inc. in Norwalk, Conn., saw a 50% increase in the number of visitors to its ticket site.

On the old Priceline.com home page, customers had to click a specific button to order a plane ticket, rent a car or make a hotel reservation (see screenshot at right). A new feature, packaged prominently in a gold box on the home page, asks customers where they are going and when. This change paid off. Now 50% more people start down the path to buying a ticket, and 5% to 10% of them actually finish the process. The old format is still available, but only 1% of people who use it buy a ticket. In this case, simplicity rules.

"Anytime you can take a thought out of the process for the user, it's always a good thing," says Brian Harniman, vice president of marketing at Priceline.com.

TIP 4: Be Selective When Copying Design Ideas

When eliminating stale site features, avoid going on a freshening rampage. Don't just wantonly lift designs from successful sites. Take Amazon.com, arguably one of the world's most copied sites. If a company that also sold such easily describable items as CDs and books were to copy Amazon's Web design, it would probably work. But when a site that sells hard-to-describe items — or, even worse, one that isn't transactional at all — borrows design elements from Amazon, it can be a recipe for confusion. When borrowing, "you always need to consider the context and why it works," cautions Tahir.

On the other hand, studying sites such as Amazon.com is a great way to stay up to date on the latest in good design. "Amazon has so much good stuff that people should learn from," says Tahir. One of the best things is "good, common-sense category names for their stuff," she says. "They call cameras *cameras*. They're not *digital imaging*."

TIP 5: Give Visitors Fair Warning of Changes

Freshening changes might seem small, but that doesn't mean users don't need to be warned. Transactional sites, as opposed to corporate sites, need to be especially cautious, announce changes in advance and move slowly, says Kipp Lynch, director of user experience at Nervewire Inc., a management consulting and systems integration firm in Newton, Mass. "It's kind of like Stephen Jay Gould," says Lynch. How so? The late biologist was renowned for his punctuated equilibrium theory of evolution, which posits that species evolve in spurts between long periods of little change. On Web sites, punctuated equilibrium is jarring for customers.

When A.G. Edwards redesigned its site last year, it notified users in two ways — on the site and through the mail. The company staggered the notices and then the rollouts, which started in April 2001 and wrapped up three months later. "We made them aware that a new site was coming on the log-in page of the old site, and we also sent them a packet of information in the mail with steps for what to do when migrating," says Lueg. Both the new and old Web sites were then run in parallel for six weeks. ▶
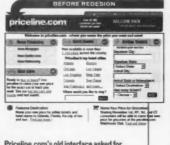
Schwartz is a freelance writer in Somerville, Mass.

REDUCE ONLINE ERRORS
Staples Inc. and Fidelity Investments created ways to help Web site visitors find what they need and boosted revenue in the process.

QuickLink: 31780
www.computerworld.com

Priceline.com

| BEFORE REDESIGN | AFTER REDESIGN |

Priceline.com's old interface asked for information about a visitor's trip, including the state to be visited, mode of transportation and type of accommodation.
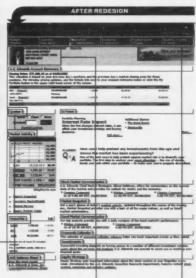
In the new interface, Priceline.com has lowered the barriers to entry. The new feature simply asks customers where they are going and when.

AGEdwards.com

| BEFORE REDESIGN | AFTER REDESIGN |

Clients didn't always understand the terminology A.G. Edwards used on the old page.

The new version of the client home page is consistent with the look of the A.G. Edwards home page. It now contains "tip of the iceberg" views of other sections on the home page.

To make the site more personal, names, photos and contact information for financial consultants were added.

Terminology has been tweaked over time to make it more intuitive.

Web Watchers

What you need to know to land a job and keep your skills fresh in the Web metrics field. By Sharon J. Watson

Employee Spotlight

CAREERS

- **Name:** JUDY THOMAS
- **Title:** Online business consultant
- **Employer:** Electronic Data Systems Corp., an IT services firm in Plano, Texas
- **30-second résumé:** Graduated from Texas A&M University in College Station with a degree in journalism and a minor in business. Completed an internship at a public relations firm; designed its Web site. Became assistant webmaster at Texas A&M; learned design and maintenance issues. Joined EDS's advertising department; analyzed online ad campaigns. Took a temporary position with EDS's online marketing and communications group last year, focusing on Web metrics; position became permanent last December.
- **Overall responsibility:** Helps company determine whether intranet and external sites are helping achieve business goals, focusing on integrity, performance and usability. Evaluated Web metrics software for purchase by EDS. Works

with internal and external clients to establish metrics; creates performance reports; designs and manages user feedback mechanisms.

- **Skills boost:** "Understand how to design and maintain a Web site," Thomas recommends. It's not necessary to be a "code junkie," she says, but it is important to understand the implications for users of the design and internal workings of a page or site.

Thomas says she continually meets with business groups to understand the goals for their sites and surveys users on how they interact with a site. "You don't want to be the Web analytics person who's stuck in the closet," she says.

Thorough knowledge of how a specific site works is critical because statistics alone can mislead. For example, internal tests and Web spider and cache server hits can inflate total page-hit numbers. "You will never get exact metrics," says Thomas. "It's as much an art as it is science."

— Watson is a freelance writer in Chicago.

TALK TO USERS, says Judy Thomas, an online business consultant at EDS. "You don't want to be the Web analytics person who's stuck in the closet."

REID HORN

Skills

- **Basic hard-skills portfolio:** Web design and programming; information architecture and design; interaction design; user-centered design; usability testing, including running and evaluating representative user test sessions.
- **Be aware that the analytics/metrics/usability field is young and fluid.** Different approaches to metrics demand different skills, with some companies seeking tech-heavy "Web analysts" with hardcore database skills. Others want candidates with strong business skills.
- **Bonus tip:** Don't work for a company that doesn't support metrics and usability. Such companies will be sold on usability only when they see it increasing sales elsewhere.

Training

- **Build at least one Web site,** starting from business concept to tracking user behavior, to get a good overview of metrics and usability. Vendors offer training on their own metrics tools, although out-of-box solutions won't cover everything.
- **Read up.** *The Design of Everyday Things,* by Donald A. Norman, is a good place to start. Check out *www.useit.com* and *www.usableweb.com* for information and links to other usability and design sites.

Salaries

- **Most Web metrics/usability positions pay from $75,000 to $120,000,** although a top usability expert can command more. Some metrics job titles include Web analyst, user experience manager and manager, database marketing.

SOURCES: JAKOB NIELSEN, WEB USABILITY EXPERT AND PRINCIPAL AT NIELSEN NORMAN GROUP, FREMONT, CALIF.; ROBERT HATTEN, IT DIRECTOR AT DOMAIN SOURCE INC., IRVINE, CALIF.; AND JUDY THOMAS, ONLINE BUSINESS CONSULTANT AT EDS

POISED FOR GROWTH

Is It Hot?

MARKET: Jakob Nielsen, a usability guru and principal at Nielsen Norman Group in Fremont, Calif., says he expects usability positions to grow quickly during the next decade as companies across many industries look for concrete returns from their Web site investments. "It's a growing trend to see if Web sites are doing what they are supposed to for customers," he says.

DEMAND: Right now, metrics/usability job postings are scarce, and Nielsen says the recession is dampening demand. In addition, metrics and usability are "almost impossible to sell" to those unconvinced of their worth, he says. But he predicts that as more metrics-savvy employees move into management, they will establish more metrics and usability positions.

Best Place

Electronic Data Systems Corp.

- **An international IT services company**
- **Ranked No. 32** on *Computerworld*'s 2002 Best Places to Work in IT list
- **2001 revenue:** $21.5 billion
- **Number of IT workers:** More than 500
- **How IT hones staff skills:** "You must have something to measure, or you can't manage it," says Mike Minchew, manager of online commerce at EDS. Managing the company's internal and external Web sites so they support business goals has become a priority for EDS and the responsibility of a multidisciplinary 28-member team.

Ensuring that the company measures the right metrics on its 6,000 intranet sites and interprets the data correctly requires Web design, metric analysis and user testing skills. Business knowledge and communication skills are also critical. That's a blend EDS could find only with a team. "There's a severe shortage of people truly knowledgeable across all these areas," says Minchew.

For the team members, working with metrics leads to valuable business knowledge and experience. "You know marketing, services development and delivery, and that makes it easy to move around the company," says Minchew.

"I want to grow into managing," says Judy Thomas, online business consultant and the Web analytics team member charged with evaluating raw metrics data. One of her goals: to head up EDS's advertising and communications area. Minchew says she could do it.

"Judy's building a much broader skills base than lots of Web professionals," he says. "It's a skill set anyone can move up with."

The Next Chapter

Critics predict Web sites will become even more annoying. But they'll be more stable and require less manual labor, too.

■ THAT FEELS AWFUL

At Web sites of the future, all senses will be involved, including smell and feel. For example, for a food site you'll have a device on your PC that emits the odor of a pot roast and perhaps a device that lets you feel its texture. And the image will be in three dimensions.
■ *Scott Testa, president, Mindbridge Inc., Norristown, Pa.*

■ FORCING CUSTOMERS ONLINE

The high cost of maintaining customers in both off-line (store, phone, mailing center) and online channels will force company Web sites to become the epicenter of customer services and sales. As a result, companies will strengthen their online customer service and create a genuinely interactive experience, with animated agents, live chat or voice-over-IP customer service. The challenge will be in forcing multiple channel users to use just the online channel and then converting off-line customers to online.
■ *Idil Cakim, director of knowledge development, Burson-Marsteller, New York*

■ RUINING A GOOD THING

The prevalence of intrusive advertising will ruin the Web experience and limit the appeal of broad-spectrum Web browsing. Indeed, within the next two years, public Web sites will be as unappealing as public restrooms: essential if you're desperate, but decidedly unpleasant. Pop-overs, pop-unders, faux search results, animated skyscrapers, fictitious dialog boxes, interstitials ... all will bombard users, driving them away and discouraging them from exploring the Web.

Who knows what annoying technology advertisers and browser developers will create next? The only winners will be recognized name-brand sites, which can encourage visitors to pay or register in order to turn off the advertising.
■ *Alan Zeichick, principal analyst, Camden Associates, San Bruno, Calif.*

■ BUSINESS HUBS

In the world of business-to-business markets, Web sites will become less relevant. Custom, private, jointly created digital hubs and extranets will be the real environments for business dialogue.
■ *Ralph A. Oliva, executive director, Institute for the Study of Business Markets, Smeal College of Business, Pennsylvania State University, University Park*

■ MORE STABLE, MORE AUTOMATED

There's good news and bad news coming for Web site stability and management. The good news is that sites should become more and more stable as time progresses; their performance and dependability will continue to improve as coding becomes cleaner, and the lack of pesky competition in the browser market means only one product — Internet Explorer — to design around.

The bad news is that it will take fewer human beings to tend to the machines that serve up this new-found stability, meaning decreased salaries and head count around the business of Web site operation. (Then again, this is good news if you're an employer.)
■ *Jim Bunte, CEO, Transistor 8 LLC, Santa Monica, Calif., and member of the original development team for Homestore.com*

■ THE THREE-TIERED INTERNET

Within seven years, the Internet as we know it won't exist. Instead, we'll have a multitiered Internet.

The top tier will be a business-quality Internet that's wrapped in a virus-free zone achieved through extremely rigorous outer-perimeter security restrictions. This tier will have tight quality-of-service controls and the highest levels of redundancy.

A middle tier will extend Web services into the consumer space, where individuals will have a virtual commerce identity to conduct transactions on the Internet. The average consumer will use e-mail, chat and streaming — and many will also use avatar-based online worlds as another means of communication.

The lower tier will be occupied by public-service organizations that, because of their direct interface with the mainstream public, require a more accessible and traditional presence.
■ *Duncan Black and Dave Asprey, business strategists, Cable & Wireless PLC, London and Santa Clara, Calif.*

■ DOWNSIDES OF HIGH BANDWIDTH

With high-bandwidth connections becoming more common in the next two years, Web developers will eschew the static site and provide interactive multimedia Web features — even if they don't serve a purpose beyond being eye candy. This will lead to further Internet congestion, taxing routers and other network hardware.

Also as a result of high-bandwidth connections, spammers and virus writers will exploit the opportunity to provide multimedia spam and worms delivered at high speed right to your desktop.
■ *Sunil Hazari, adjunct professor, Robert H. Smith School of Business, University of Maryland, College Park*

"Hi. I'm Mark."

In the next six to 12 months, the Web will feature avatars - "emotive interfaces" with human faces and voices - for applications such as customer service and online training, says Mark Yahiro, president of Pulse Entertainment Inc. in San Francisco. He says the key to widespread adoption is developing low-cost, lightweight avatars with technology that creates videolike characters at one-tenth the cost of video and with files that are 1% or 2% the size of video files. In this illustration, a virtual character is created from a photo by selecting a few key movable parts of the face; then the image will be placed on a 3-D wireframe.

Jot It Down

In a year or so, users will be able to call up a Web site with just a handwritten symbol or abbreviation, without ever touching a keyboard, predicts Leonid Kitainik, general manager of Pen&Internet, a unit of Parascript LLC in Niwot, Colo. In this illustration, the user of a wireless handheld device writes *CNN* and circles it, telling the handwriting-recognition engine that it wants to call up the CNN/Sports Illustrated Web site.

Consultants - Computer/I.T. Professionals

Optimal Solutions Integration, Inc. has multiple openings for SAP Consultants, Software Analysts, and Systems Analysts. Please send resume with salary history requirements to Optimal Solutions Integration; 8445 Freeport Parkway #240; Irving, TX 75063. Open to Green Card holders or US Citizens. No phone calls or walk-ins please.

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Programmer Analyst wanted by IT company in Newark, NJ. Must have excellent skills in developing business information system applications using VB, FoxPro, C/C++, SQL, Oracle, etc. Must have Bachelors Degree in business & computers, MIS, or related besides two years experience. Respond to President, DCM Group, Inc., 563 Broad Street, Newark, NJ 07102.

◆

BUSINESS DATABASE DEVELOPER wanted by medical & diagnostic imaging clinics in Houston, TX. Must have M.S. in MIS or Comp. Sc. plus exp. Respond by resume only to: Mr. M. Daneshmand, Universal MRI and Diagnostics, Inc., 3115 W. Loop South #2, Houston, TX 77027.

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Localization Communication Specialist wanted by a software devlp. & mktg. company in Pleasanton, CA. Must have Bach deg in speech communication with fluency in spoken and written Japanese. Send resume to HR, CSWL, Inc., 6800 Koll Center Pkwy., Suite 100, Pleasanton, CA 94566.

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Database Administrators Design, develop and maintain complex databases in Oracle 7.3.3, 8.x, 8i, 9i, RMAN, SQL-Backtrack 3.0.4/3.3.0, replicate KORNSHELLS, Java, Pro*C, SQL, PL/SQL, EMC's BCV, VERITAS File Systems 3.0.3, VM, BRIO 5.0/6.0, SIEBEL 99.6 /2000, BMC'S Patrol Developer 2000, Forms 6.0 UNIX, SUN HA 2.2, HP 10, 11.0 and SCO 5.0. Prevailing wage/benefits. Send resume to Attn: Manoj Appully, Lantern Systems, Inc., 520 Sessinghem Court, Alpharetta, GA 30005. EOE.

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Education & Experience: Bachelors/Masters in Engineering with 3-4 years of Industrial Experience in Medical imaging applications/ Financial industry experience using C++ (COM+, ATL, STL, CORBA) or Java (Swing, J2EE) primarily on Syngo platform desired. Should also be able to convert the technical specifications to the code.

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Software engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Developer 6i, Oracle 8i, Informatica and PVCS. Requirements: Bachelor's Degree or equivalent in Computer Science or related field and two years experience as a software engineer or computer programmer, knowledge of Developer 6i, Oracle 8i, Informatica and PVCS. Salary: $56,000 /year. Working Conditions: 8:00 A.M. to 5:00 P.M., 40 hours /week, involves extensive travel and frequent relocation. Apply: Manager, Armstrong County Team PA CareerLink, 1270 North Water Street, PO Box 759, Kittanning, PA 16201-0759, Job No. WEB267308.

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DIVERSITY IN IT CAREERS

Advertising Supplement

The Disconnect Between Hispanics and the IT Industry

By Jennifer Hicks

IMDIVERSITY.com

One in eight people in the U.S. is of Hispanic origin. This equals 32.8 million Latinos – or 12 percent of the total population. Nearly half live in metropolitan areas – where there is still some demand for talented IT workers. So, why do Hispanics account for only 5.4% of the IT workforce?

As has been widely reported, early exposure to technology is essential in helping minority members and women decide to enter IT. Yet, oftentimes, many have missed this exposure, particularly members of Latino communities.

In part this is because a digital divide still exists. Only half of all Hispanics have a computer at home and only 44 percent access the Internet. But aside from the physical availability of computers, a February 2002 report, commissioned by IBM and written by the Tomás Rivera Policy Institute, cites additional impediments:

- Education has failed to help Latinos understand or realize the benefits of the digital age.
- The content and tools of IT aren't exactly compatible with the Latino culture.
- Latinos in school have less IT networking activities and mentoring than do their non-Hispanic counterparts.

The Rivera report says that this exposure and mentoring can be critical and "can raise awareness about career paths and employment opportunities in a wide variety of IT-enabled jobs. If acquiring IT skills in school can be seen as instrumental to a more attractive future life, it will likely increase the perseverance of student in school and in IT."

Highlighting the importance of mentors and cultural congruity is Andy Lopez, professor of computer science at the University of Minnesota - Morris. He says, "After being in industry for about a year, I was urged by my manager (John Carlson, Ph.D. from Cal Tech) to consider going to graduate school... While in graduate school I taught part time and had a better time than I would have imagined. So that led me to academic positions [that] I have been doing ever since."

The Hispanic labor force is expected to grow 36% by 2010, meaning it will account for 13% of the total U.S. work force. Eight of the 10 fastest growing occupations will be in the information technology field, according to the Bureau of Labor Statistics and about 11.8 million computer services jobs will be added by 2008. Most will require at least some higher education.

The Top 10 Companies for Hispanics according to *Fortune Magazine (7/8/02)*

Rank/Company	Revenue (in millions$)
PNM Resources	2,352
Southern California Edison	12,184
McDonald's	14,870
BellSouth	24,130
LeviStrauss	4,259
United Services Automobile Association	8,973
Avon Products	5,995
Sempra Energy	8,029
Colgate-Palmolive	9,428
SBC Communications	45,908

As the Rivera report says:

For educational technology to have the maximum possible impact on Latino children it must be integrated into the task of learning and tied to educational reform. In addition, students must have experiences that enable them to see the link between computer skills and increased life chances. They need to be exposed early to career paths and the job opportunities afforded by computer skills.

Author bio:

Jennifer Hicks, author of several hundred articles and who lives in the Boston area, is the director of online content for IMDiversity.com http://www.imdiversity.com, the Web site where opportunities, careers, and diversity connect.

RESOURCES

How to Contact Computerworld

TELEPHONE/FAX

Main phone number .... (508) 879-0700
All editors unless otherwise noted below
Main fax number .... (508) 875-8931
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E-MAIL

Our Web address is **www.computerworld.com**.
All staff members can be reached
via e-mail using the form:
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LETTERS TO THE EDITOR

Letters to the editor are welcome and
should be sent to: **letters@computerworld.com**.
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MAIL ADDRESS

**PO Box 9171, 500 Old Connecticut Path,
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REPRINTS/PERMISSIONS

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CONTACTING CW EDITORS

We invite readers to call or write with their
comments and ideas. It is best to submit
ideas to one of the department editors and
the appropriate beat reporter.

Editor in chief Maryfran Johnson (508) 820-8179
Editorial director, print/online Patricia Keefe (508) 820-8183

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CONTRIBUTING COLUMNISTS

John Berry, David Foote, Pimm Fox, Michael Gartenberg, Dan Gillmor, Thornton A. May, David Moschella, Bart Perkins, Nicholas Petreley, Fran Quittel

CONTRIBUTING WRITERS

James Cope, Amy Helen Johnson, Kathleen Melymuka, Deborah Radcliff

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NEWS

Study Says IT Execs Aren't Walking the Walk on ROI

60% don't cost-justify IT spending regularly

BY THOMAS HOFFMAN

Although most IT leaders are talking tough when it comes to cost-justifying their IT investments, a new study suggests that it might just be lip service.

According to a report published earlier this month by New York-based Ernst & Young LLP, 79% of Fortune 1,000 IT decision-makers agree that financial justification of IT projects is important, yet only 40% conduct business case analyses on a regular basis. The survey, conducted from May to July, polled more than 100 CIOs, chief technology officers and other executives responsible for making IT investment decisions across a swath of vertical industries.

The reason behind the lack of follow-through may be that IT decision-makers often lack the tools, resources and time to conduct a full-blown ROI analysis for most IT projects, said Chris Mazzei, a senior manager in Ernst & Young's Decision Analytics practice in New York and a co-author of the report.

Those constraints strike a chord with many CIOs who are trying to do more with less amid IT budget and staffing cutbacks. Many companies "have initiatives in place aimed at boosting revenues, or there might be a mandate to fix a problem," said Frank Bourne, vice president of marketing technology at Harris Corp., a communications equipment maker in Melbourne, Fla. For its part, Harris conducts ROI analyses "where we can," but Bourne says that "some proj-

ects are less ROI-driven and more operationally driven."

At Nobel Biocare USA Inc., some IT projects are cost-justified and accounted for as a capital expense. One example is a shopping application that's being added to the company's Web site, said Tim Cronin, manager of IT at the Yorba Linda, Calif.-based maker of dental implants. In other cases, said Cronin, "the justification itself is to do something to achieve competitive advantage."
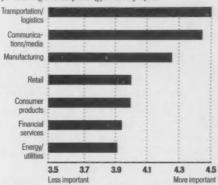
Still, financial considerations are becoming increasingly important for senior executives who make IT investment decisions. "I was surprised to see to what degree that's actually happening, in terms of the

size of the project needing approval [and] who is involved in the approval process," said Mazzei. For instance, 80% of the respondents said they have to cost-justify IT projects of less than $100,000, with many projects valued at less than $10,000 requiring sign-off.

The need to cost-justify IT investments to secure funding also appears to vary by industry. Respondents in the transportation/logistics and communications/media industries rated the financial justification of IT projects as more important than did respondents in other sectors, such as energy/utilities and financial services.

In addition, respondents said financial justification is most important for IT security, customer relationship management and supply chain management projects. E-learning and mobile commerce projects were deemed the least important to cost-justify. ▶

Importance of IT ROI, by Industry

How important is financial justification, such as ROI, for securing internal funding for an IT project?

NOTE: Respondents uses a scale of 1 to 5, with 1 being "not important" and 5 being "very important."

SOURCE: SURVEY OF MORE THAN 100 IT DECISION-MAKERS AT FORTUNE 1,000 COMPANIES. CONDUCTED MAY TO JULY 2002 BY ERNST & YOUNG LLP IN NEW YORK.

CFOs' IT Woes

in very poor shape."

In addition, many large companies that have grown through mergers and acquisitions have a hodgepodge of disparate accounting systems in place that crunch the numbers differently and aren't in sync with one another.

"It's usually not a single nail in the coffin. ... It's typically a combination of factors" that hamper financial reporting, said Robert Charette, director of risk management services at Cutter Consortium. Charette is also president and chief risk officer at Itabhi Corp., a risk management consultancy in Spotsylvania, Va.

"I don't care if you're on the most current ERP system. If [a company is running] disparate systems, you're not going to have visibility and accuracy" in reporting financial data from

widely scattered business units, said Rich de Moll, a vice president in the finance and employee transformation practice at Cap Gemini, who authored the study.

Many CEOs and CFOs concur with those conclusions. The shortcomings of financial systems "aren't really an issue for us, but they are for very

large companies with disparate systems across their organizations," said Louise J. Wannier, president and CEO of Enfish Corp., a Pasadena, Calif.-based enterprise software developer. For its part, the privately held company relies on finance software from Fargo, N.D.-based Microsoft Great Plains and a mix of homegrown sys-
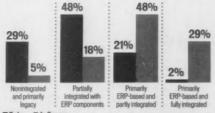
tems that deliver the financial information Wannier said she needs.

In some cases, the financial systems contain the information CFOs need to do their jobs. But "CFOs don't know how to get the information" because they don't know how to use the systems effectively, said Tim Sullivan, CFO at The Yofarm Co., a yogurt maker in Naugatuck, Conn. Though the Best Software Inc. MAS 90 financial systems in place at Yofarm have their shortcomings, said Sullivan, "we can amend them to meet the situation."

Many companies appear to have their work cut out for them to streamline and improve their financial systems and processes. Said Charette, "It's a mess out there. There are a lot of [CEOs and CFOs] who have their fingers crossed that their financial statements are accurate because a lot of them don't have good financial systems to tell them where they're at." ▶

Better Integration on the Horizon

Which statement best describes your IT capabilities related to financial transaction processing?

■ Today ■ In 3 years

SOURCE: MAY 2002 SURVEY OF 180 SENIOR FINANCE EXECUTIVES AT FORTUNE 1,000 COMPANIES, CONDUCTED BY CFO RESEARCH SERVICES IN BOSTON FOR CAP GEMINI ERNST & YOUNG.

BPA ABM RED TAG

FRANK HAYES/FRANKLY SPEAKING

Questionable Software

A READER WRITES ABOUT the Uniform Computer Information Transactions Act (UCITA) and its "self-help" provision: "Fail to pay your phone bill and the phone company 'self-helps' itself by remotely shutting off your service. Steal premium channels by hacking your cable connection and the cable company shuts your box down from miles away. Fail to make enough car payments and the bank sends someone to legally steal your car out of your driveway in the middle of the night.... [What UCITA seeks is] to allow software publishers some of the same protections available to so many other businesses." (See Readers' Letters, page 21.)

That's a fair point — and it raises questions that go to the heart of the why we need laws that deal specifically with software.

After all, telephone and cable services are just that: services we pay for every month. Other utilities deliver consumable products such as electricity, water and gas on a pay-as-you-go basis. Stop paying for what you get, and they'll cut you off.

So should software be treated as a consumable product, like natural gas? Or is it a service, like cable? Or is it something else?

And in most states, a repo man can't legally take your car without your consent if it's located at your home or business, or if you otherwise object to the impending repossession. In some states a repossession requires warning letters or a court order. And repo "self-help" only applies when the car is collateral for a loan.

Does software fit that model? If it does, should software self-help have the same limits?

Let's face it — after 50 years, the law still isn't sure how to treat software. And the questions keep piling up.

Is software a durable good that can be used indefinitely and then resold, like a used car? Can it be resold but not copied, like a book? Or can it only be licensed — and if it can, does a license exist if customers are told they're "buying" shrink-wrapped software?

Should software vendors get to choose whether their software is a product, a service, sold, leased, licensed or given away?

What about warranties? What about damage caused by the failure of a product? If your tires disintegrate, your gas tank explodes or

your air conditioner catches fire because of flawed design or faulty manufacturing, you can sue the manufacturer. Should software be treated the same way? And if there is such a thing as software product liability, who gets sued if open-source software fails?

The questions don't stop there. Can a software license be valid if the licensee has to pay for the product before he sees the license? Or if the vendor can change the license without negotiating with or even informing the licensee?

Is it fraud if the product doesn't work the way the demo did?

Does the customer have the right to use software in ways the vendor never intended? Or the right to examine and patch software so it can do things the vendor doesn't want it to?

Should a vendor be able to force a customer to upgrade? What if the old version does what the customer needs, and the new version doesn't? Or how about when the cost of the new version will be far more than its price tag because of the expense of retrofitting other applications to work with it?

Finally, if there's a dispute, how should it be resolved? Under state laws? Federal laws? Contract law? Consumer protection law? At the courthouse, with dueling lawyers? Or at the firewall, with dueling hackers trying to enforce or block self-help?

See? Questions piled on questions. And every question means that much more uncertainty for software vendors and customers at every level. That's why we really *do* need a clear, consistent legal framework relating to software — a set of laws that everyone can live with.

Just not UCITA. ❯

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

SHARK TANK

THIS IT group is supposed to be making remote backups for departmental servers, but for several days one server's backup keeps timing out, and pilot fish can't log in to check it. Is there anything wrong with the server? fish asks local tech. "No, it's fine." Well, did you change anything? fish asks. "Only the host name and the IP address," tech says. "And we installed a different operating system."

USER KEEPS complaining that this newly installed PC doesn't work. IT pilot fish is puzzled; it tests out OK every time, but user keeps bringing it back. Finally, fish asks user to describe the working environment – any excess vibration? he asks. No, but it turns out the PC is in a meat freezer at minus 20 degrees Fahrenheit. "I suggested he get one of those space blankets, wrap the CPU in it and never turn it off," says fish. "We never got another call, so I'm assuming my suggestion worked."

IT ACCOUNTING application manager tells programmer pilot fish, "We need to take your name as author off your application procedure manuals before we distribute them." That's company policy, so fish doesn't mind – until he hears that manager has been telling department heads he personally wrote the manuals. "Not surprisingly," grumbles fish, "he also does this with all the applications we write."

USER'S MOUSE is getting jerky, and rebooting and checking connections doesn't fix it. But when IT pilot fish flips the mouse over, he finds tape covering the mouse ball. It won't work that way, fish tells user. Is a co-worker messing with you? "No, I put the tape there," user says. "I didn't want the mouse to get dirty so it wouldn't work, so I put the tape over the hole to protect it."

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